

EXHIBIT A

**IN THE UNITED STATES DISTRICT COURT
DISTRICT OF NEW JERSEY**

**IN RE: VALSARTAN, LOSARTAN, AND
IRBESARTAN PRODUCTS LIABILITY
LITIGATION**

**This Document Relates to Gaston J. Roberts,
Jr., and wife Jan Roberts | Case No. 1:20-cv-
00946-RBK-JS**

MDL No. 2875

**Honorable Renée Marie Bumb,
Chief Judge**

**EXPERT REPORT OF VICTORIA
CHERNYAK, M.D., M.S.**

I. Introduction and Purpose of Statement

My name is Victoria Chernyak, M.D. M.S., and I am a Professor of Radiology at the Columbia University Vagelos College of Physicians and Surgeons. I am board certified in radiology and have substantial clinical and research expertise in liver imaging and the diagnosis of primary liver malignancies, particularly hepatocellular carcinoma (“HCC”). I have been asked to provide my independent expert review of the radiological scans taken of Mr. Gaston J. Roberts’ liver in 2016 and 2018, and to respond to the opinions offered by Fareeha Siddiqui, M.D. and Christopher Mele, M.D. regarding the potential causes of Mr. Roberts’ HCC, which was diagnosed based on radiological imaging in August 2018.

II. Qualifications

I received my undergraduate degree from Rutgers College in 1997 and my medical degree from Albert Einstein College of Medicine (Einstein) in 2001. I completed a radiology residency and abdominal MRI fellowship at Einstein’s affiliated hospital, Montefiore Medical Center, after which I joined the faculty at Einstein in 2007. At Montefiore, I served as Director of Abdominal MRI and Interim Section Chief for the Division of Abdominal Imaging, as well as earning my Master of Science in Clinical Research Methods. I am currently a professor of Radiology at Columbia University Irving Medical Center and an attending radiologist at New York-Presbyterian. I am licensed to practice medicine in New York.

I am a nationally and internationally recognized expert in Liver Imaging Reporting and Data System (“LI-RADS”), a system endorsed by American College of Radiology (“ACR”), American Association for Study of Liver Diseases (“AASLD”) and United Network for Organ Sharing. I

have been a member of the LI-RADS Steering Committee since 2015, and have led or co-led LI-RADS as a chair or co-chair since 2020. I co-edited the 2018 LI-RADS Manual, and co-led the creation of a clear and concise universal liver imaging lexicon that has been adopted internationally.

I am also the author of more than 150 peer-reviewed publications and have been an invited speaker for more than 140 national and international presentations. I serve as deputy editor of *Radiology* and am a member of the scientific committees for several societies, including the Society for Abdominal Radiology, the Society for Advanced Body Imaging, and the Radiological Society of North America. My curriculum vitae (CV) is attached as Exhibit A.

I am being compensated at a rate of \$600.00 per hour for this matter. All of my opinions are stated to a reasonable degree of medical certainty.

III. Opinions

A. HCC And Diagnosis Using Liver Imaging Reporting And Data System (LI-RADS)

HCC is the most common type of primary (i.e., arising from the liver) liver cancer. HCC is the sixth-most-common cancer in the world and is the third-leading cause of cancer-related deaths.¹ HCC develops through the process of hepatocarcinogenesis, where a cluster of benign liver cells undergoes a series of transformations, accumulates critical mutations and over time transforms into a malignant lesion (HCC).² Early stages of HCC are treatable with expected median survival > 5 years, whereas advanced HCC disease has poor prognosis, with median survival of 3 months.³ Surveillance of patients at risk for HCC development is done to ensure early detection, diagnosis, and treatment of HCC in order to improve patient outcomes.⁴

LI-RADS is a system that allows a noninvasive diagnosis (i.e., based on imaging features only, not requiring biopsy confirmation) of HCC in appropriate patient populations. The LI-RADS criteria are applied to a restricted patient population with sufficiently high risk for HCC development, namely patients with cirrhosis, chronic hepatitis B viral infection (with or without cirrhosis) and/or personal history of HCC. **Diagnosis of cirrhosis** (either based on morphologic

¹ Szilveszter RM, Muntean M, Florea A. Molecular Mechanisms in Tumorigenesis of Hepatocellular Carcinoma and in Target Treatments-An Overview. *Biomolecules*. 2024 Jun 4;14(6):656. doi: 10.3390/biom14060656. PMID: 38927059; PMCID: PMC11201617.

² Szilveszter RM, Muntean M, Florea A. Molecular Mechanisms in Tumorigenesis of Hepatocellular Carcinoma and in Target Treatments-An Overview. *Biomolecules*. 2024 Jun 4;14(6):656. doi: 10.3390/biom14060656. PMID: 38927059; PMCID: PMC11201617.

³ Reig M, Forner A, Rimola J, Ferrer-Fàbrega J, Burrel M, Garcia-Criado Á, Kelley RK, Galle PR, Mazzaferro V, Salem R, Sangro B, Singal AG, Vogel A, Fuster J, Ayuso C, Bruix J. BCLC strategy for prognosis prediction and treatment recommendation: The 2022 update. *J Hepatol*. 2022 Mar;76(3):681-693. doi: 10.1016/j.jhep.2021.11.018. Epub 2021 Nov 19. PMID: 34801630; PMCID: PMC8866082.

⁴ Reig M, Forner A, Rimola J, Ferrer-Fàbrega J, Burrel M, Garcia-Criado Á, Kelley RK, Galle PR, Mazzaferro V, Salem R, Sangro B, Singal AG, Vogel A, Fuster J, Ayuso C, Bruix J. BCLC strategy for prognosis prediction and treatment recommendation: The 2022 update. *J Hepatol*. 2022 Mar;76(3):681-693. doi: 10.1016/j.jhep.2021.11.018. Epub 2021 Nov 19. PMID: 34801630; PMCID: PMC8866082.

changes to the liver detected on imaging, or based on quantitative imaging assessment or biopsy) is sufficient to allow application of LI-RADS. It is important to note that, once cirrhosis is present, LI-RADS is applicable, and neither the length of time that cirrhosis has been present, nor the severity of cirrhosis, is taken into account. It is also important to note that similar international guidelines for HCC assessment recognize that the presence of cirrhosis, regardless of the length of time it has been observed in the patient or stage of cirrhosis advancement, is an accepted risk factor for HCC.⁵ Thus, if a patient has cirrhosis, he/she is considered to be at high risk for HCC and can be diagnosed with HCC noninvasively, based on LI-RADS or other existing international guidelines.

Diagnostic LI-RADS includes seven diagnostic categories, each representing a diagnostic certainty of HCC vs benignity. Each category has predefined criteria, which are based on the observed imaging features of the lesion. The LI-RADS categories range from LR-1 (Definitely benign) to LR-5 (Definite HCC), and also include LR-TIV (Definite tumor in vein) and LR-M (Probably or definitely malignant, not HCC-specific).⁶ The criteria for the LR-5 (Definite HCC) category are very accurate for the diagnosis of HCC, such that the probability of a LR-5 lesion being an HCC is at least 95%.⁷

B. Review of Imaging Examinations

April 8, 2016 CT

Mr. Roberts underwent a computerized tomography (“CT”) scan on April 8, 2016. That CT scan demonstrated a relative enlargement of the left hepatic lobe and nodular liver contour, findings that generally raise suspicion for advanced parenchymal liver disease/cirrhosis.⁸ Additionally, the

⁵ European Association for the Study of the Liver. EASL Clinical Practice Guidelines on the management of hepatocellular carcinoma. *J Hepatol.* 2025 Feb;82(2):315-374. doi: 10.1016/j.jhep.2024.08.028. Epub 2024 Dec 17. PMID: 39690085; Singal AG, Llovet JM, Yarrowan M, Mehta N, Heimbach JK, Dawson LA, Jou JH, Kulik LM, Agopian VG, Marrero JA, Mendiratta-Lala M, Brown DB, Rilling WS, Goyal L, Wei AC, Taddei TH. AASLD Practice Guidance on prevention, diagnosis, and treatment of hepatocellular carcinoma. *Hepatology.* 2023 Dec 1;78(6):1922-1965. doi: 10.1097/HEP.000000000000466. Epub 2023 May 22. Erratum in: *Hepatology.* 2023 Dec 1;78(6):E105. doi: 10.1097/HEP.000000000000621. PMID: 37199193; PMCID: PMC10663390; Korean Liver Cancer Association (KLCA) and National Cancer Center (NCC) Korea. 2022 KLCA-NCC Korea practice guidelines for the management of hepatocellular carcinoma. *Clin Mol Hepatol.* 2022 Oct;28(4):583-705. doi: 10.3350/cmh.2022.0294. Epub 2022 Oct 1. PMID: 36263666; PMCID: PMC9597235; Omata M, Cheng AL, Kokudo N, Kudo M, Lee JM, Jia J, Tateishi R, Han KH, Chawla YK, Shiina S, Jafri W, Payawal DA, Ohki T, Ogasawara S, Chen PJ, Lesmana CRA, Lesmana LA, Gani RA, Obi S, Dokmeci AK, Sarin SK. Asia-Pacific clinical practice guidelines on the management of hepatocellular carcinoma: a 2017 update. *Hepatol Int.* 2017 Jul;11(4):317-370. doi: 10.1007/s12072-017-9799-9. Epub 2017 Jun 15. PMID: 28620797; PMCID: PMC5491694.

⁶ Chernyak V, Fowler KJ, Kamaya A, Kiehl AZ, Elsayes KM, Bashir MR, Kono Y, Do RK, Mitchell DG, Singal AG, Tang A, Sirlin CB. Liver Imaging Reporting and Data System (LI-RADS) Version 2018: Imaging of Hepatocellular Carcinoma in At-Risk Patients. *Radiology.* 2018 Dec;289(3):816-830. doi: 10.1148/radiol.2018181494. Epub 2018 Sep 25. PMID: 30251931; PMCID: PMC6677371.

⁷ Lee S, et al. Percentages of Hepatocellular Carcinoma in LI-RADS Categories with CT and MRI: A Systematic Review and Meta-Analysis. *Radiology.* 2023 Apr;307(1):e220646.

⁸ Kudo M, Zheng RQ, Kim SR, Okabe Y, Osaki Y, Iijima H, Itani T, Kasugai H, Kanematsu M, Ito K, Usuki N, Shimamatsu K, Kage M, Kojiro M. Diagnostic accuracy of imaging for liver cirrhosis compared to histologically proven liver cirrhosis. A multicenter collaborative study. *Intervirol.* 2008;51 Suppl 1:17-26. doi:

CT scan shows that the umbilical vein was recanalized, confirming presence of portal hypertension (i.e., elevated blood pressure in liver vascular system). Recanalization of the umbilical vein occurs when the resistance to blood flow in the liver becomes too high (portal hypertension). The umbilical vein, which is normally thrombosed and not detectable on CT, opens up, allowing some of the blood to bypass the high-pressure areas. Cirrhosis is one of the major causes of umbilical vein recanalization.⁹ The combination of a recanalized umbilical vein, enlargement of left hepatic lobe, and nodular liver contour observed on the April 8, 2016 CT strongly indicates presence of cirrhosis and portal hypertension at that time. This CT provides grounds for a diagnosis of cirrhosis as of April 2016. If presented with this scan in my day-to-day work as an abdominal radiologist, I would report findings to be consistent with the diagnosis of cirrhosis based on the scan.

It is important to note that qualitative assessment of liver morphology on CT is not accurate for estimating how long cirrhosis has been present, or whether it is in the early stages of development. However, the fact that the cirrhosis was visibly present on a CT scan in April 2016 indicates that the cirrhosis was not new at that time. CT has lower sensitivity for detection of early (Child-Pugh A) cirrhosis as compared to more advanced (Child-Pugh B/C) cirrhosis (sensitivities 60% vs 87%, respectively).¹⁰ Therefore, CT is less likely to detect abnormalities in patients with very early cirrhosis. In the case of Mr. Roberts, the presence of morphologic changes on his April 2016 CT (i.e., enlargement of left hepatic lobe, nodular contour and recanalized umbilical vein) indicates that cirrhosis had been present for some time. While it is not possible to say exactly when Mr. Roberts developed cirrhosis, it is important to note that compensated cirrhosis, a state of cirrhosis where the liver is damaged but is still able to function, is usually asymptomatic.¹¹ The term “compensated cirrhosis” describes stages of cirrhosis *without* one or more decompensating events, such as ascites, hepatic encephalopathy, variceal hemorrhage and jaundice.¹² Because patients with compensated cirrhosis have experienced no symptoms related to cirrhosis, the diagnosis of cirrhosis often is delayed for a long time despite the presence of cirrhosis in the liver. Despite being asymptomatic, between one-third and one-half of patients with compensated cirrhosis have varices (abnormal vessels that shunt the blood away from high-pressure areas to lower-pressure areas) and clinically significant portal hypertension at the time of diagnosis.¹³ It is not unusual,

10.1159/000122595. Epub 2008 Jun 10. PMID: 18544944; Yeom SK, Lee CH, Cha SH, Park CM. Prediction of liver cirrhosis, using diagnostic imaging tools. World J Hepatol. 2015 Aug 18;7(17):2069-79. doi: 10.4254/wjh.v7.i17.2069. PMID: 26301049; PMCID: PMC4539400.

⁹ Shi Q, Xiong K, Ding B, Ye X. Clinical characteristics of cirrhosis patients with umbilical vein recanalization: A retrospective analysis. Medicine (Baltimore). 2021 Sep 3;100(35):e26774. doi: 10.1097/MD.00000000000026774. PMID: 34477116; PMCID: PMC8415999.

¹⁰ Hetland LE, et al. Suboptimal diagnostic accuracy of ultrasound and CT for compensated cirrhosis: Evidence from prospective cohort studies. Hepatol Commun. 2023 Aug 31;7(9):e0231.

¹¹ Kumar et al. Compensated liver cirrhosis: Natural course and disease-modifying strategies. World J Methodol. 2023 Sep 20;13(4):179-193.

¹² D’Amico G, Bernardi M, Angeli P. Towards a new definition of decompensated cirrhosis. J Hepatol. 2022 Jan;76(1):202-207. doi: 10.1016/j.jhep.2021.06.018. Epub 2021 Jun 23. Erratum in: J Hepatol. 2022 Mar;76(3):757. doi: 10.1016/j.jhep.2021.12.023. PMID: 34157322.

¹³ D’Amico G, Bernardi M, Angeli P. Towards a new definition of decompensated cirrhosis. J Hepatol. 2022 Jan;76(1):202-207. doi: 10.1016/j.jhep.2021.06.018. Epub 2021 Jun 23. Erratum in: J Hepatol. 2022 Mar;76(3):757. doi: 10.1016/j.jhep.2021.12.023. PMID: 34157322.

therefore, that Mr. Roberts had no reported symptoms related to his cirrhosis in 2016 despite its presence.

Generally, patients with cirrhosis require routine surveillance with ultrasound and a blood test (alpha-fetoprotein) to monitor for development of HCC.¹⁴ Again, it is important to note that HCC surveillance is offered to any patient with cirrhosis, per AASLD guidelines, excluding patients with end-stage cirrhosis with limited life expectancy.¹⁵ Patients with even early cirrhosis are recommended for surveillance because they are at sufficiently high risk for HCC for surveillance to be cost-effective. Based on my education, training, and expertise, a routine surveillance for HCC was indicated for Mr. Roberts in 2016, based on the presence of cirrhosis in 2016.

In addition, the April 8, 2016 CT demonstrated several small lesions in the right lobe of the liver, measuring up to 0.6 cm. These include:

- Segment VII, 0.6 cm (Ser 401, image 17)
- Segment V/VIII, 0.5 cm (Ser 401, image 24)
- Segment VI, 0.5 cm (Ser 401, Image 35)

Attached as Exhibit B to this report are images from the 2016 CT documenting these lesions. These lesions do not demonstrate arterial phase hyperenhancement (a hallmark of progressed HCC), and appeared as hypoenhancing foci on the portal venous phase—i.e., they had washout. When applying LI-RADS, subcentimeter lesions without arterial phase hyperenhancement and with washout are categorized LR-3 (intermediate probability of malignancy).¹⁶ Because of this, the lesions observed on Mr. Roberts' April 8, 2016 CT scan met the criteria for LR-3. Of all LR-3 observations, about 33% are malignant.¹⁷ When followed long-term, up to 60% of LR-3 observations progress to HCC within 48 months.¹⁸ According to the AASLD and LI-RADS

¹⁴ Singal AG, Llovet JM, Yarchoan M, Mehta N, Heimbach JK, Dawson LA, Jou JH, Kulik LM, Agopian VG, Marrero JA, Mendiratta-Lala M, Brown DB, Rilling WS, Goyal L, Wei AC, Taddei TH. AASLD Practice Guidance on prevention, diagnosis, and treatment of hepatocellular carcinoma. *Hepatology*. 2023 Dec 1;78(6):1922-1965. doi: 10.1097/HEP.0000000000000466. Epub 2023 May 22. Erratum in: *Hepatology*. 2023 Dec 1;78(6):E105. doi: 10.1097/HEP.0000000000000621. PMID: 37199193; PMCID: PMC10663390.

¹⁵ Singal et al. AASLD Practice Guidance on prevention, diagnosis, and treatment of hepatocellular carcinoma. *Hepatology*. 2023 Dec 1;78(6):1922-1965.

¹⁶ Chernyak V, Fowler KJ, Kamaya A, Kielar AZ, Elsayes KM, Bashir MR, Kono Y, Do RK, Mitchell DG, Singal AG, Tang A, Sirlin CB. Liver Imaging Reporting and Data System (LI-RADS) Version 2018: Imaging of Hepatocellular Carcinoma in At-Risk Patients. *Radiology*. 2018 Dec;289(3):816-830. doi: 10.1148/radiol.2018181494. Epub 2018 Sep 25. PMID: 30251931; PMCID: PMC6677371.

¹⁷ Lee S, et al. Percentages of Hepatocellular Carcinoma in LI-RADS Categories with CT and MRI: A Systematic Review and Meta-Analysis. *Radiology*. 2023 Apr;307(1):e220646.

¹⁸ Kim YY, Choi JY, Kim SU, Lee M, Park MS, Chung YE, Kim MJ. MRI Ancillary Features for LI-RADS Category 3 and 4 Observations: Improved Categorization to Indicate the Risk of Hepatic Malignancy. *AJR Am J Roentgenol*. 2020 Dec;215(6):1354-1362. doi: 10.2214/AJR.20.22802. Epub 2020 Oct 14. PMID: 33052732; Chernyak V, Fowler KJ, Kamaya A, Kielar AZ, Elsayes KM, Bashir MR, Kono Y, Do RK, Mitchell DG, Singal AG, Tang A, Sirlin CB. Liver Imaging Reporting and Data System (LI-RADS) Version 2018: Imaging of Hepatocellular Carcinoma in At-Risk Patients. *Radiology*. 2018 Dec;289(3):816-830. doi: 10.1148/radiol.2018181494. Epub 2018 Sep 25. PMID: 30251931; PMCID: PMC6677371.

management recommendations, patients with LR-3 observations require surveillance with CT or MRI every 3-6 months, to monitor these observations¹⁹

August 7, 2018 MRI

Mr. Roberts underwent magnetic resonance imaging (“MRI”) on August 7, 2018. Like Mr. Roberts’ April 2016 CT, the August 7, 2018 MRI showed morphologic changes consistent with a diagnosis of cirrhosis. The 2018 MRI images show enlargement of the left hepatic lobe, nodular contour and recanalization of umbilical vein, similar to what was present and visible on the April 2016 CT. Attached as Exhibit C to this report are images from the April 2016 CT and August 2018 MRI that document these morphologic changes in 2016 and 2018.

Three lesions are present on the August 2018 MRI that meet criteria for LR-5 (definite HCC) which, as discussed above, has > 95% probability of being HCC and requires no biopsy for confirmation:

- 5.8 cm in Segment V/VIII
- 3.8 cm in Segment V
- 1.5 cm in Segment VI

The 5.8 cm lesion visible in Segment V/VIII is located in the same area as one of the lesions apparent on the April 2016 CT, which met the criteria for LR-3 (intermediate probability of malignancy) as of April 2016. The precise location of LR-3 lesion colocalizes to the central area of the LR-5 lesion seen in August 2018. A comparison of the images from the April 2016 CT and the August 2018 MRI (including the location of the lesions visible in Segment V/VIII on both scans) is attached as Exhibit D to this report.

Because there was no interval imaging done between April 2016 and August 2018, it is not possible to conclusively determine whether the preexisting LR-3 lesion visible on the 2016 CT progressed into the LR-5 lesion visible on the August 2018 MRI. However, given the locations of the LR-3 and LR-5 lesions, it is possible that the LR-3 lesion progressed into the LR-5 lesion, and there is no scientifically valid means to conclusively rule out that possibility.

IV. Response to Plaintiffs’ Experts

A. Dr. Siddiqui

Dr. Siddiqui’s report contains multiple statements and conclusions that are medically and/or scientifically incorrect and render her opinions scientifically invalid. My main criticisms of Dr. Siddiqui’s report are detailed below.

1. Pg. 20, “Roberts did not have cancer prior to ingesting valsartan containing NDMA.”

¹⁹ Chernyak V, Fowler KJ, Kamaya A, Kieler AZ, Elsayes KM, Bashir MR, Kono Y, Do RK, Mitchell DG, Singal AG, Tang A, Sirlin CB. Liver Imaging Reporting and Data System (LI-RADS) Version 2018: Imaging of Hepatocellular Carcinoma in At-Risk Patients. Radiology. 2018 Dec;289(3):816-830. doi: 10.1148/radiol.2018181494. Epub 2018 Sep 25. PMID: 30251931; PMCID: PMC6677371.

In 2016, Mr. Roberts did not have any visible lesions that met noninvasive criteria for HCC. However, since he did have several lesions that met the criteria for LR-3, and approximately 30% of LR-3 observations are HCCs, it is possible that one or more of these lesions represented a small HCC. Dr. Siddiqui fails to account for this possibility and she provides no scientific basis (because there is none) to exclude it.

2. Pg. 22, “From the time cirrhosis is first *diagnosed*, it takes approximately 7-10 years before increased rates of HCC are observed.”

This statement is contrary to the recognized guidelines for HCC surveillance and diagnosis. Based on the current scientific evidence and international practice guidelines, cirrhosis is a recognized major risk factor for development of HCC, regardless of its duration.²⁰ All guidelines across the world consider a patient to be at risk for HCC (and therefore eligible for HCC surveillance and noninvasive diagnosis) once the diagnosis of cirrhosis is established.²¹ There are no requirements that cirrhosis needs to have been present or observable for any period of time for the patient to be considered “high risk” for HCC.²²

²⁰ European Association for the Study of the Liver. EASL Clinical Practice Guidelines on the management of hepatocellular carcinoma. J Hepatol. 2025 Feb;82(2):315-374. doi: 10.1016/j.jhep.2024.08.028. Epub 2024 Dec 17. PMID: 39690085; Singal AG, Llovet JM, Yarchoan M, Mehta N, Heimbach JK, Dawson LA, Jou JH, Kulik LM, Agopian VG, Marrero JA, Mendiratta-Lala M, Brown DB, Rilling WS, Goyal L, Wei AC, Taddei TH. AASLD Practice Guidance on prevention, diagnosis, and treatment of hepatocellular carcinoma. Hepatology. 2023 Dec 1;78(6):1922-1965. doi: 10.1097/HEP.0000000000000466. Epub 2023 May 22. Erratum in: Hepatology. 2023 Dec 1;78(6):E105. doi: 10.1097/HEP.0000000000000621. PMID: 37199193; PMCID: PMC10663390; Korean Liver Cancer Association (KLCA) and National Cancer Center (NCC) Korea. 2022 KLCA-NCC Korea practice guidelines for the management of hepatocellular carcinoma. Clin Mol Hepatol. 2022 Oct;28(4):583-705. doi: 10.3350/cmh.2022.0294. Epub 2022 Oct 1. PMID: 36263666; PMCID: PMC9597235; Omata M, Cheng AL, Kokudo N, Kudo M, Lee JM, Jia J, Tateishi R, Han KH, Chawla YK, Shiina S, Jafri W, Payawal DA, Ohki T, Ogasawara S, Chen PJ, Lesmana CRA, Lesmana LA, Gani RA, Obi S, Dokmeci AK, Sarin SK. Asia-Pacific clinical practice guidelines on the management of hepatocellular carcinoma: a 2017 update. Hepatol Int. 2017 Jul;11(4):317-370. doi: 10.1007/s12072-017-9799-9. Epub 2017 Jun 15. PMID: 28620797; PMCID: PMC5491694.

²¹ European Association for the Study of the Liver. EASL Clinical Practice Guidelines on the management of hepatocellular carcinoma. J Hepatol. 2025 Feb;82(2):315-374. doi: 10.1016/j.jhep.2024.08.028. Epub 2024 Dec 17. PMID: 39690085; Singal AG, Llovet JM, Yarchoan M, Mehta N, Heimbach JK, Dawson LA, Jou JH, Kulik LM, Agopian VG, Marrero JA, Mendiratta-Lala M, Brown DB, Rilling WS, Goyal L, Wei AC, Taddei TH. AASLD Practice Guidance on prevention, diagnosis, and treatment of hepatocellular carcinoma. Hepatology. 2023 Dec 1;78(6):1922-1965. doi: 10.1097/HEP.0000000000000466. Epub 2023 May 22. Erratum in: Hepatology. 2023 Dec 1;78(6):E105. doi: 10.1097/HEP.0000000000000621. PMID: 37199193; PMCID: PMC10663390; Korean Liver Cancer Association (KLCA) and National Cancer Center (NCC) Korea. 2022 KLCA-NCC Korea practice guidelines for the management of hepatocellular carcinoma. Clin Mol Hepatol. 2022 Oct;28(4):583-705. doi: 10.3350/cmh.2022.0294. Epub 2022 Oct 1. PMID: 36263666; PMCID: PMC9597235; Omata M, Cheng AL, Kokudo N, Kudo M, Lee JM, Jia J, Tateishi R, Han KH, Chawla YK, Shiina S, Jafri W, Payawal DA, Ohki T, Ogasawara S, Chen PJ, Lesmana CRA, Lesmana LA, Gani RA, Obi S, Dokmeci AK, Sarin SK. Asia-Pacific clinical practice guidelines on the management of hepatocellular carcinoma: a 2017 update. Hepatol Int. 2017 Jul;11(4):317-370. doi: 10.1007/s12072-017-9799-9. Epub 2017 Jun 15. PMID: 28620797; PMCID: PMC5491694.

²² Singal et al. AASLD Practice Guidance on prevention, diagnosis, and treatment of hepatocellular carcinoma. Hepatology. 2023 Dec 1;78(6):1922-1965.

3. Pg. 29, “Mr. Roberts’ exposure to NDMA contaminated valsartan promoted his cancer to be more aggressive and progress faster.”

While growth of HCC is variable, 2/3 of HCCs have tumor volume doubling time (“TVDT”) of 3 months or longer.²³ Assuming a constant TVDT of 3 months, it would take approximately 2 years and 8 months for a tumor to grow from 0.5 cm (the size of the LR-3 lesion observed in Segment VIII of the liver on the April 2016 CT) to 5.8 cm (the size of the LR-5 lesion observed in Segment VIII of the liver on the August 2018 MRI). Accordingly, if the LR-3 lesion observed in April 2016 progressed into the LR-5 lesion observed in August 2018, the timing of that progress would be consistent with the normal observed progression of HCC. In my experience, it is not unusual for a patient presenting with advanced HCC to have no imaging evidence of disease 2-3 years prior to diagnosis.

4. Pg. 30, “Mr. Roberts’ cirrhosis was so mild and at such an early stage in 2016 that I would not have expected him to receive an actual diagnosis of cirrhosis.”

As described above, Mr. Roberts’ 2016 CT demonstrated features consistent with cirrhosis and portal hypertension. The presence of morphologic changes to the liver on his 2016 CT (i.e., enlargement of the left hepatic lobe, nodular contour and recanalized umbilical vein) indicates that cirrhosis had been present for some time and was not in the early stages. The presence of recanalized umbilical vein indicates the presence of portal hypertension, which argues against the suggestion that cirrhosis was very early.

5. Pgs. 31-32, “Mr. Roberts’ exposure to NDMA contaminated valsartan was the only substantial factor in causing his liver cancer.”

I am not aware of any valid scientific basis to attribute development of HCC *only* to factors other than cirrhosis in a patient with cirrhosis. As stated above, the scientific literature and international guidelines recognize cirrhosis as the major risk factor of HCC. In my opinion, since cirrhosis was present, it is not possible to state that cirrhosis was not a cause or the substantial factor in causing Mr. Roberts’ HCC.

B. Dr. Mele

Dr. Mele’s report also contains statements that are medically and/or scientifically wrong, or otherwise do not support an opinion that Mr. Roberts’ HCC was unrelated to his cirrhosis and other established risk factors or the disease.

1. Pgs. 2-3, “It is important to note that none of these lesions nor areas of abnormal focal enhancement identified on this 2018 MRI Examination were present on the initial April 19, 2016 CT Examination.”

²³ Tu L, et al. World J Hepatol. 2024 May 27;16(5):800-808.

This statement is incorrect. As stated above, one of the LR-3 lesions was located in the same region as an LR-5 (Definite HCC) in 2018 and it is not possible to rule out the possibility that the LR-3 lesion progressed into the LR-5 lesion.

2. Pg. 3, “the HCC discovered in 2018 does not correspond with the precise locations of the sub-centimeter foci of decreased attenuation observed on the 2016 CT exam in segments 6, 7, 8.”

This statement is incorrect. As stated above, one of the LR-3 lesions was located in the same region as a LR-5 (Definite HCC) in 2018. The precise location of LR-3 lesion colocalizes to the central area of the LR-5 lesion.

3. Pg. 3, “the April 19, 2016 CT Examination does not demonstrate any definitive imaging evidence of the hepatocellular carcinoma present on the 2018 CT or MRI.”

The April 2016 CT did not show any lesions that could have been diagnosed as definite HCC (LR-5) based on imaging features at that time. However, the lesions present on the April 2016 MRI met the criteria for LR-3 and carry ~30% probability of being HCC in 2016 and a 60% probability of progressing into HCC within 48 months. In addition, the 2016 CT identified morphological changes consistent with a cirrhosis diagnosis, which put Mr. Roberts at high risk of developing HCC, and should have triggered ongoing surveillance for HCCs.

V. Conclusion

Mr. Roberts’ radiological imaging is consistent with the diagnosis of cirrhosis in 2016. According to the current scientific evidence and international practice guidelines, cirrhosis is a recognized major risk factor for development of HCC as soon as it can be observed on imaging. Because Mr. Roberts had cirrhosis as of 2016, two years prior to his HCC diagnosis, there is no valid scientific basis for plaintiffs’ experts to rule out cirrhosis as the cause of Mr. Roberts’ HCC. To the contrary, it is the most likely cause. The presence of visible cirrhosis on imaging (regardless of the maturity of the cirrhosis) is what allows radiologists to use the LI-RADS algorithm to conclusively diagnose HCC via imaging. Further, there is no valid scientific basis for plaintiffs’ experts to rule out the possibility that the 0.5 cm lesion visible in Segment VIII of the liver on Mr. Roberts April 2016 CT progressed into the HCC identified in the same region of the liver in August 2018.

Signed on April 8, 2025:


VICTORIA CHERNYAK, M.D., M.S.

**MATERIALS CONSIDERED IN THE EXPERT REPORT OF
VICTORIA CHERNYAK, M.D., M.S.**

ARTICLES:

- Chernyak, Victoria, et al. "Liver Imaging Reporting and Data System (LI-RADS) version 2018: imaging of hepatocellular carcinoma in at-risk patients." *Radiology* 289.3 (2018): 816-830.
- D'Amico, Gennaro, Mauro Bernardi, and Paolo Angeli. "Towards a new definition of decompensated cirrhosis." *Journal of hepatology* 76.1 (2022): 202-207.
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DEPOSITION TRANSCRIPTS:

- Deposition Transcript of Samuel Hooks III, M.D. with Exhibits, dated January 29, 2025
- Deposition Transcript of Mark Lockhart, M.D. with Exhibits, dated February 13, 2025

EXPERT REPORTS:

- Expert Report of Christopher M. Mele, M.D. with Exhibits, dated March 9, 2025
- Expert Report of Fareeha Siddiqui, M.D. with Exhibits, dated March 10, 2025

STAMPED RECORDS:

- Infirmary_GRobertsJr00014 - Infirmary_GRobertsJr00015; NORTH BALDWIN INFIRMARY HOSPITAL (ACUTE), dated April 8, 2016

STUDIES:

LOCATION	EXAMINATION	Date
Thomas Hospital	Study-011801020297-XR CHEST PORTABLE 1 VIEW	01/02/2018
Thomas Hospital	Study-XR CHEST PORTABLE	01/02/2018
Thomas Hospital	Study-8760-CT ABDOMEN PELVIS W	04/12/2019
Thomas Hospital	Study-CT ABDOMEN PELVIS W	04/12/2019
Thomas Hospital	Study-427-CT ABDOMEN WWO	04/19/2016
Thomas Hospital	Study-CT ABDOMEN WWO	04/19/2016
Thomas Hospital	Study-9989-CT ABDOMEN PELVIS W	06/14/2019
Thomas Hospital	Study-9989-CTA CHEST WWO	06/14/2019
Thomas Hospital	Study-CT ABDOMEN PELVIS W	06/14/2019
Thomas Hospital	Study-CTA CHEST WWO	06/14/2019
Thomas Hospital	Study-E201906141348-XR CHEST PORTABLE	06/14/2019
Thomas Hospital	Study-XR CHEST PORTABLE	06/14/2019
Thomas Hospital	Study-171807170078-US ABDOMEN LIMITED	07/17/2018
Thomas Hospital	Study-4075-CT ABD AND PELVIS W	07/17/2018
Thomas Hospital	Study-CT ABD AND PELVIS W	07/17/2018
Thomas Hospital	Study-E202001060930-US PARACENTESIS	01/06/2020
Thomas Hospital	Study-E202001100369-US PARACENTESIS	01/10/2020
Thomas Hospital	Study-E202001140520-US PARACENTESIS	01/17/2020
Thomas Hospital	Study-E202001220457-US PARACENTESIS	01/22/2020
Thomas Hospital	Study-E202001280513-US PARACENTESIS	01/28/2020
Thomas Hospital	Study-E202002030391-US PARACENTESIS	02/03/2020
Thomas Hospital	Study-E202002100326-US PARACENTESIS	02/07/2020
Thomas Hospital	Study-E202002110522-US PARACENTESIS	02/11/2020
Thomas Hospital	Study-E202002140533-US PARACENTESIS	02/14/2020

LOCATION	EXAMINATION	Date
Thomas Hospital	Study-E202002181186-US PARACENTESIS	02/18/2020
Thomas Hospital	Study-E202002210400-US PARACENTESIS	02/21/2020
Thomas Hospital	Study-E202002250235-US PARACENTESIS	02/25/2020
Thomas Hospital	Study-E202002280392-US PARACENTESIS	02/28/2020
Thomas Hospital	Study-182236764-XR CHEST 1 VIEW-AP	03/04/2020
Thomas Hospital	Study-183431607-CHEST	03/04/2020
Thomas Hospital	Study-185149225-XR CHEST 1 VIEW-AP	03/04/2020
Thomas Hospital	Study-E202003040568-US PARACENTESIS	03/04/2020
Thomas Hospital	Study-E202003041392-CHEST	03/04/2020
Thomas Hospital	Study-E202003050554-US THORACENTESIS	03/04/2020
Thomas Hospital	Study-XR CHEST 1V AP	03/04/2020
Thomas Hospital	Study-XR CHEST 1V POST THORACENTESIS	03/04/2020
Thomas Hospital	Study-XR CHEST PORTABLE	03/04/2020
Thomas Hospital	Study-E202003050655-XR CHEST 1 VIEW-AP	03/05/2020
Thomas Hospital	Study-XR CHEST 1V AP	03/05/2020
Thomas Hospital	Study-E202003060616-XR CHEST PORTABLE 1 VIEW	03/06/2020
Thomas Hospital	Study-XR CHEST PORTABLE	03/06/2020
Thomas Hospital	Study-E202003070064-XR CHEST PORTABLE 1 VIEW	03/07/2020
Thomas Hospital	Study-XR CHEST PORTABLE	03/07/2020
Thomas Hospital	Study-E202003100649-XR CHEST PORTABLE 1 VIEW	03/10/2020
Thomas Hospital	Study-E202003101010-US PARACENTESIS	03/10/2020
Thomas Hospital	Study-XR CHEST PORTABLE	03/10/2020
Thomas Hospital	Study-E202003121110-XR CHEST 1 VIEW-AP	03/12/2020
Thomas Hospital	Study-XR CHEST 1V AP	03/12/2020
Thomas Hospital	Study-E202003131415-XR CHEST PORTABLE 1 VIEW	03/13/2020
Thomas Hospital	Study-XR CHEST PORTABLE	03/13/2020
Thomas Hospital	Study-7378-CT SINUSES WO	07/22/2019
Thomas Hospital	Study-CT SINUSES WO	07/22/2019
Thomas Hospital	Study-E201910140544-US ABDOMEN COMPLETE	10/14/2019
Thomas Hospital	Study-E201911081488-XR CHEST 1 VIEW-AP	11/08/2019
Thomas Hospital	Study-XR CHEST 1V AP	11/08/2019
Thomas Hospital	Study-E201911200544-US PARACENTESIS	11/19/2019
Thomas Hospital	Study-2842-CT ABDOMEN PELVIS W	11/22/2019
Thomas Hospital	Study-CT ABDOMEN PELVIS W	11/22/2019
Thomas Hospital	Study-E201911221420-XR CHEST 1 VIEW-AP	11/22/2019
Thomas Hospital	Study-XR CHEST 1V AP	11/22/2019
Thomas Hospital	Study-E201911230197-US PARACENTESIS	11/23/2019
Thomas Hospital	Study-E201912050546-US PARACENTESIS	12/05/2019
Thomas Hospital	Study-E201912120532-US PARACENTESIS	12/10/2019

LOCATION	EXAMINATION	Date
Thomas Hospital	Study-E201912170544-US PARACENTESIS	12/17/2019
Thomas Hospital	Study-E201912240105-US PARACENTESIS	12/24/2019
Thomas Hospital	Study-E201912270508-US PARACENTESIS	12/27/2019
Thomas Hospital	Study-4586-CT ABDOMEN PELVIS WO	12/28/2019
Thomas Hospital	Study-CT ABDOMEN PELVIS WO	12/28/2019
Thomas Hospital	Study-E201912310732-US PARACENTESIS	12/31/2019
North Baldwin Infirmary	Study-021604050014-US ABDOMEN COMPLETE	04/08/2016
North Baldwin Infirmary	Study-US ABDOMEN COMPLETE	04/08/2016
Thomas Hospital	Study-E202001060930-US PARACENTESIS	01/06/2020
Thomas Hospital	Study-E202001100369-US PARACENTESIS	01/10/2020
Thomas Hospital	Study-E202001140520-US PARACENTESIS	01/17/2020
Thomas Hospital	Study-E202001220457-US PARACENTESIS	01/22/2020
Thomas Hospital	Study-E202001280513-US PARACENTESIS	01/28/2020
Thomas Hospital	Study-E202002030391-US PARACENTESIS	02/03/2020
Thomas Hospital	Study-E202002100326-US PARACENTESIS	02/07/2020
Thomas Hospital	Study-E202002110522-US PARACENTESIS	02/11/2020
Thomas Hospital	Study-E202002140533-US PARACENTESIS	02/14/2020
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Thomas Hospital	Study-E202003050554-US THORACENTESIS	03/04/2020
Thomas Hospital	Study-XR CHEST 1V AP	03/04/2020
Thomas Hospital	Study-XR CHEST 1V POST THORACENTESIS	03/04/2020
Thomas Hospital	Study-XR CHEST PORTABLE	03/04/2020
Thomas Hospital	Study-XR CHEST 1V AP	03/05/2020
Thomas Hospital	Study-XR CHEST PORTABLE	03/06/2020
Thomas Hospital	Study-XR CHEST PORTABLE	03/07/2020
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Thomas Hospital	Study-XR CHEST PORTABLE	03/13/2020
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Thomas Hospital	Study-CT SINUSES WO	07/22/2019
Thomas Hospital	Study-E201910140544-US ABDOMEN COMPLETE	10/14/2019
Thomas Hospital	Study-E201911081488-XR CHEST 1 VIEW-AP	11/08/2019
Thomas Hospital	Study-XR CHEST 1V AP	11/08/2019
Thomas Hospital	Study-E201911200544-US PARACENTESIS	11/19/2019
Thomas Hospital	Study-2842-CT ABDOMEN PELVIS W	11/22/2019
Thomas Hospital	Study-CT ABDOMEN PELVIS W	11/22/2019

LOCATION	EXAMINATION	Date
Thomas Hospital	Study-E201911221420-XR CHEST 1 VIEW-AP	11/22/2019
Thomas Hospital	Study-XR CHEST 1V AP	11/22/2019
Thomas Hospital	Study-E201911230197-US PARACENTESIS	11/23/2019
Thomas Hospital	Study-E201912050546-US PARACENTESIS	12/05/2019
Thomas Hospital	Study-E201912120532-US PARACENTESIS	12/10/2019
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Thomas Hospital	Study-CT ABDOMEN PELVIS WO	12/28/2019
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Thomas Hospital	Study-E202001060930-US PARACENTESIS	01/06/2020
Thomas Hospital	Study-E202001100369-US PARACENTESIS	01/10/2020
Thomas Hospital	Study-E202001140520-US PARACENTESIS	01/17/2020
Thomas Hospital	Study-E202001220457-US PARACENTESIS	01/22/2020
Thomas Hospital	Study-E202001280513-US PARACENTESIS	01/28/2020
Thomas Hospital	Study-E202002030391-US PARACENTESIS	02/03/2020
Thomas Hospital	Study-E202002100326-US PARACENTESIS	02/07/2020
Thomas Hospital	Study-E202002110522-US PARACENTESIS	02/11/2020

Exhibit A

Victoria Chernyak, MD, MS, FSAR, FESGAR, FSABI, FACR
Faculty Curriculum Vitae

1. Date of Preparation: February 24, 2025

2. Personal Data

Office address: 701 West 168th Street NYC, New York, NY 10032

Home address: 662 West 232nd St Bronx, NY 10463

Cell phone: 908-451-9752

Email address - Work: vc2688@cumc.columbia.edu

Email address - Personal: vichka17@hotmail.com

3. Academic Appointments, Hospital Appointments, and Other Work Experience

Academic Appointments

Professor of Radiology	Columbia University Vagelos College of Physicians and Surgeons New York, NY	7/2024-current
Professor of Radiology	Weil Cornell Medical College New York, NY	11/2023-7/2024
Full Member, Radiology	Memorial Sloan Kettering Cancer Center New York, NY	7/2022-6/2024
Associate Professor of Radiology	Harvard Medical School Boston, MA	04/2021-7/2022
Professor of Urology	Albert Einstein College of Medicine Bronx, NY	07/2018-03/2021
Professor of Radiology	Albert Einstein College of Medicine Bronx, NY	07/2018-03/2021
Associate Professor of Urology	Albert Einstein College of Medicine Bronx, NY	07/2017-06/2018
Associate Professor of Radiology	Albert Einstein College of Medicine Bronx, NY	06/2013-06/2018
Assistant Professor of Obstetrics and Gynecology	Albert Einstein College of Medicine Bronx, NY	12/2009-12/2015
Assistant Professor of Radiology	Albert Einstein College of Medicine Bronx, NY	07/2007-06/2013

Hospital Appointments

Attending, Diagnostic Radiology	Columbia University Irving Medical Center New York, NY	7/2024-current
Attending, Diagnostic Radiology	Memorial Sloan Kettering Cancer Center New York, NY	07/2022-6/2024
Attending, Diagnostic Radiology	Beth Israel Deaconess Medical Center Boston, MA	04/2021-07/2022
Attending, Diagnostic Radiology	Montefiore Medical Center Bronx, NY	07/2007-04/2021

4. Education

Masters in Science (MS)	Albert Einstein College of Medicine Bronx, NY	07/2012 – 06/2014
Doctor of Medicine (MD)	Albert Einstein College of Medicine Bronx, NY	08/1997 – 06/2001
Bachelor of Arts (BA)	Rutgers College, Rutgers University New Brunswick, NJ	09/1994 – 06/1997

5. Training

Fellow, Abdominal MRI	Montefiore Medical Center Bronx, NY	07/2006 - 06/2007
Resident, Diagnostic Radiology	Montefiore Medical Center Bronx, NY	07/2002 – 06/2006
Intern, Obstetrics and Gynecology	University Hospital/UMDNJ Newark, NJ	07/2001 - 06/2002

6. Licensure and Board Certification

Licensure

New York	229472	08/04/2003	08/2022 - 08/2024
Massachusetts	286552	3/25/2021	09/2022 – 09/2023
New Jersey	25MA11560000	7/20/2022	7/2022 – 6/30/2023
DEA number:	FC0135207		
NPI number:	1255424495		

Board Certification

American Board of Radiology	53165	6/14/2006 - current
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7. Honors & Awards

Distinguished Reviewer	<i>American Journal of Roentgenology</i>	2024
Certificate of Merit for Educational Exhibit (Deyirmendjian C, Padda B, Fowler KJ, Chernyak V , Sirlin CB, Jiang H, Vu K-N, Dadour JR, Murphy-Lavallée J, Nguyen BN, Billiard J-S, Olivié D, Tang A. “Prognostic	Annual Meeting Radiologic Society of North America	2024

and Predictive Imaging Markers of HCC:
A Pictorial Essay”)

Fellow	Society of Advanced Body Imaging	2024
Volunteer Service Award	American Board of Radiology	2023
Fellow	European Society of Gastrointestinal and Abdominal Radiology	2023
Fellow	American College of Radiology	2022
Editor's Recognition Award for reviewing with Distinction	<i>RadioGraphics</i>	2023 2022 2021
Editor's Recognition Award with Special Distinction	<i>Radiology</i>	2023 2022 2021 2020
Morris Simon Mini Research Sabbatical	Beth Israel Deaconess Medical Center	2021
Richard H. Marshak International Lecturer	Society of Abdominal Radiology	2021
Best Paper in New Frontiers of Science (Allen et al. Comparative effectiveness of advanced cancer longitudinal response evaluation methods: artificial intelligence-assisted vs. standard-of-care)	Annual Meeting Society of Abdominal Radiology	2020
Certificate of Merit for Educational Exhibit (Ram R, Flusberg M, Swamy N, Chernyak V , Pandey T, Bajaj G, Jambhekar K. How Well Do You Know the Pelvic Floor Anatomy)	Annual Meeting Radiologic Society of North America	2020
Distinguished Reviewer	<i>Abdominal Radiology</i>	2020 2017
Certificate of Merit for Educational Exhibit (Kobi M, Ricci ZJ, Kanmaniraja D, Chernyak V . Many Faces of Lymphoma: Abdominal Manifestations of Extranodal Lymphoma)	Annual Meeting Radiologic Society of North America	2019
Volunteer Service Award	American Board of Radiology	2019
Distinguished Reviewer	<i>Journal of Magnetic Resonance Imaging</i>	2019 2018
Certificate of Merit for Educational Exhibit (Elsayes K, Sirlin CB, Fowler K, Tang A, Bashir M, Chernyak V , Kielar A, Hecht E. “Pitfalls in the Diagnosis of Hepatocellular Carcinoma: User Errors in Applying LI-RADS v2017”)	Annual Meeting Radiologic Society of North America	2018
Magna Cum Laude Award for Educational Exhibit (Chernyak V , Fowler K, Kielar A, Furlan A, Tang A, Cui J, Papadatos D, Sirlin CB. Cirrhosis – The Double-Edged Sword for CT and MRI Diagnosis of HCC)	Annual Meeting Radiologic Society of North America	2018

Distinguished Reviewer	<i>Current Problems in Diagnostic Radiology</i>	2018
Outstanding Reviewer	<i>Magnetic Resonance Imaging</i>	2018
Outstanding Reviewer	<i>European Journal of Radiology</i>	2018
Outstanding Reviewer	<i>Academic Radiology</i>	2017
Outstanding Reviewer	<i>Clinical Imaging</i>	2017
Distinguished Reviewer	<i>Journal of Magnetic Resonance Imaging</i>	2017
Outstanding Reviewer	<i>Current Problems in Diagnostic Radiology</i>	2016
Certificate of Merit for Educational Exhibit (Chernyak V , Santillan CS, Hooker JC, Sirlin CB. "Liver Imaging Reporting and Data System: An Interactive Tutorial")	Annual Meeting Radiologic Society of North America	2016
Fellow	Society of Abdominal Radiology	2015
Cum Laude Award for Educational Exhibit, RSNA Annual Meeting (Flusberg M, Mazzariol F, Oh SK, Ricci ZJ, Rozenblit AM, Chernyak V . "Abdominal Incidentaloma Quiz: A Review of the ACR Incidental Findings Committee Recommendations")	Annual Meeting Radiologic Society of North America	2014
Master of Science in Clinical Research Methods with Distinction	Albert Einstein College of Medicine	2014
Certificate of Merit Award for Educational Exhibit, RSNA Annual Meeting "A Wolf in Sheep's Clothing: Tumor in the Abdomen Mimicking Benign Conditions" Oh SK, Ricci ZJ, Stein MW, Flusberg M, Roberts J, Wolf EL, Chernyak V , Rozenblit AM, Mazzariol F.	Annual Meeting Radiologic Society of North America	2014
Roentgen Resident/Fellow Research Award	Radiologic Society of North America	2006
Milton Elkin, MD Outstanding Graduating Resident	Montefiore Medical Center	2006
Alpha Omega Alpha Honor Medical Society	Albert Einstein College of Medicine	2001
Graduated <i>Summa cum laude</i>	Rutgers College, Rutgers University	1997
Henry Rutgers Scholar	Rutgers College, Rutgers University	1997

8. Administrative Leadership and Academic Service

Institutional Leadership Activities

Director of Oncologic Imaging, Department of Radiology	Beth Israel Deaconess Medical Center Boston, MA	04/2021-06/2022
Interim Section Chief, Abdominal Imaging Section	Montefiore Medical Center Bronx, NY	05/2018-03/2021

Director, Abdominal Magnetic
Resonance Imaging

Montefiore Medical Center
Bronx, NY

07/2008-03/2021

Institutional Administrative Activities

Committee for Appointments and Promotions to Associate Professor	Ad Hoc Chair	Albert Einstein College of Medicine Bronx, NY	1/2014-12/2014
Committee for Appointments and Promotions to Associate Professor	Member	Albert Einstein College of Medicine Bronx, NY	1/2015-12/2016
Epidemiology Subcommittee for Clinical Research Training Program Curriculum Reform	Member	Albert Einstein College of Medicine Bronx, NY	1/2016-12/2017
Committee for Appointments and Promotions to Full Professor	Member	Albert Einstein College of Medicine Bronx, NY	1/2019-12/2020

Service on Committees

National

<i>RadioGraphics</i> International Mentor Program	Member	Radiologic Society of North America	12/2023-current
LI-RADS Steering Committee	Co-Chair	American College of Radiology	7/2023-current
Annual Meeting Council's Scientific Program Committee	Co-Chair	Society of Abdominal Radiology	4/2023-4/2024
Panel on Appropriateness Criteria-Gastrointestinal Imaging	Member	American College of Radiology	7/2022-current
Abstract Reviewer Committee	Member	Radiologic Society of North America	1/2022-current
Scientific Committee	Member	Society for Advanced Body Imaging	1/2021-current
LI-RADS Steering Committee	Chair	American College of Radiology	7/2020-7/2023
Practice Parameter HCC Expert Panel	Member	American Association for the Study of Liver Diseases	1/2019-12/2020
Disease Focused Panel: Pelvic Floor Dysfunction	Co-Chair	Society of Abdominal Radiology	4/2019-4/2022
Annual Meeting Planning Committee	Member	Society for Advanced Body Imaging	1/2022-current
Subcommittee of Webinar Educational Program, Educational	Chair	Society for Advanced Body Imaging	1/2019-1/2022

Educational Committee	Member	Society for Advanced Body Imaging	1/2019-12/2022
Annual meeting, course on LI-RADS Lexicon	Course Organizer	Radiological Society of North America	1/2021-12/2021
ARRS Fall Symposium on Body MRI	Director	American Roentgen Ray Society	1/2021-12/2021
General Radiology OLA Committee	Member and Item Writer	American Board of Radiology	1/2020-current
LI-RADS Steering Committee	Co-Chair	American College of Radiology	7/2019-7/2020
Annual Meeting Council's Scientific Program Committee	Member	Society of Abdominal Radiology	1/2019-current
Instructional Course on GU Imaging	Chair	American Roentgen Ray Society	5/2019-5/2023
LI-RADS Steering Committee	Vice Chair	American College of Radiology	7/2018-7/2019
Disease Focused Panel: Pelvic Floor Dysfunction	Vice Chair	Society of Abdominal Radiology	4/2018-4/2019
OLA GI Committee	Member and Item Writer	American Board of Radiology	1/2017-12/2019
ACR-SAR-SPR Practice Parameter for the Performance of Magnetic Resonance Imaging of the Liver, SAR-ACR Collaborative Committee	Member	Society of Abdominal Radiology	5/2019-12/2019
Disease Focused Panel: Pelvic Floor Dysfunction	Member	Society of Abdominal Radiology	1/2017-current
Disease Focused Panel: HCC Diagnosis	Member	Society of Abdominal Radiology	1/2015-12/2017
LI-RADS Lexicon and Writing Working Group	Co-Chair	American College of Radiology	1/2020-current
v2017/v2018 Writing Group	Co-Chair	American College of Radiology	1/2017-12/2018
Reporting Working Group, LI-RADS	Chair	American College of Radiology	1/2017-12/2018
LI-RADS Steering Committee	Member	American College of Radiology	1/2016-current
Panel on Appropriateness Criteria-Gastrointestinal Imaging	Member	American College of Radiology	7/2016-7/2019
Hepatobiliary Agents Working Group, Liver Imaging Reporting and Data System (LI-RADS)	Member	American College of Radiology	7/2013-7/2017

International

Body MRI Study Group	Member	International Society of Magnetic Resonance in Medicine	7/2021-12/2023
Annual Meeting Scientific committee	Member	International Society of Magnetic Resonance in Medicine	1/2019-1/2023

9. Professional Organizations and Societies

Memberships

ESGAR (European Society for Gastrointestinal and Abdominal Radiology)	2019-current
AASLD (American Association for the Study of Liver Diseases)	2019-2022
ESR (European Society of Radiology)	2018-current
SABI (Society for Advanced Body Imaging)	2018-current
ISMRM (International Society of Magnetic Resonance in Medicine)	2017-2023
ARRS (American Roentgen Ray Society)	2006-current
SAR (Society of Abdominal Radiology)	2006-current
ACR (American College of Radiology)	2006-current
RSNA (Radiological Society of North America)	2002-current

Editorial Board

Deputy editor, <i>Radiology</i>	2023-current
Editor, Radiology in Training program, <i>Radiology</i>	2023-current
Associate Editor, <i>American Journal of Roentgenology</i>	2023-current
Guest editor for special section on Quantitative Imaging, <i>Abdominal Imaging</i>	2022
Associate Editor, <i>Abdominal Imaging</i>	2020-2023
Associate Editor, <i>American Journal of Roentgenology</i>	2020-2021
Deputy Editor, <i>Journal of Magnetic Resonance Imaging</i>	2019-2023
Scientific Editorial Board member for Oncology Section, <i>European Radiology</i>	2018-2024
Subject Editor - Abdominal Imaging Section, <i>Clinical Imaging</i>	2017-2023
Associate Editor, <i>Journal of Magnetic Resonance Imaging</i>	2017-2019

Journal Reviewer

<i>Journal of Hepatology</i>	2024
<i>Korean Journal of Radiology</i>	2022-current
<i>Liver Transplantation</i>	2022
<i>Hepatology Communications</i>	2021
<i>Radiographics</i>	2021-current
<i>Liver International</i>	2021-current
<i>Clinical Gastroenterology and Hepatology</i>	2021-current
<i>Hepatology</i>	2021-current
<i>Journal of Computer Assisted Tomography</i>	2021

<i>Journal of Hepatocellular Carcinoma</i>	2020-2021
<i>The Lancet Gastroenterology & Hepatology</i>	2019-2022
<i>International Urogynecology Journal</i>	2019
<i>Radiology</i>	2019-current
<i>American Journal of Radiology</i>	2018-current
<i>European Journal of Radiology</i>	2018-current
<i>Magnetic Resonance Imaging</i>	2018-2021
<i>Digestive and Liver Disease</i>	2017
<i>British Journal of Radiology</i>	2017
<i>Journal of Urology</i>	2017
<i>Academic Radiology</i>	2017-current
<i>European Radiology</i>	2017-current
<i>Abdominal Radiology</i>	2017-current
<i>Current Problems in Diagnostic Radiology</i>	2015-2022
<i>Clinical Imaging</i>	2013-2023
<i>Journal of Magnetic Resonance Imaging</i>	2013-current

10. Fellowship and Grant Support

Prior Funded Projects

Award Source	American College of Radiology Fund for Collaborative Research in Imaging (FCRI)
Project title	LI-RADS Research Registry: A multi-institutional liver imaging registry
Annual direct costs	<i>\$200,000 equally divided between participating institutions</i>
Duration of support	2021-2023
Name of Principal Investigator	Victoria Chernyak, MD MS and Claude Sirlin, MD, UCSD
Role	Co-PI
Project Goals	<ul style="list-style-type: none"> To develop a multi-institutional liver imaging registry To establish a combination of non-LI-RADS imaging features that are associated with prognosis in patients with hepatocellular carcinoma

Award Source	American College of Radiology Innovation Fund
Project title	Validation and application of ACR assist in the development of a structured reporting model
Annual direct costs	<i>\$99,650</i>
Duration of support	2018-2020

Name of Principal Investigator	Claude Sirlin, MD, UCSD
Role	Sub-contract PI
Project Goals	To develop an ACR Assist module on LI-RADS; the award was equally divided between UCSD, UCSF and Montefiore
Award Source	NIH 5R01HL144707-02
Project title	Non-alcoholic Fatty Liver Disease and Cardiovascular Disease in Hispanics/Latinos
Annual direct costs	\$2,303,286
Duration of support	2019-2020
Name of Principal Investigator	Jorge R. Kizer and Joao A.C. Lima, Northern California Institute Research & Education, San Francisco, CA
Role	Radiology Investigator (member of the MRI committee responsible for central review of incidental findings on MRI performed for the study)
Project Goals	The study proposes to examine sociocultural and genetic variants as determinants of liver and heart disease in this population.
Your percent (%) effort	1%
Award Source	American College of Radiology Innovation Fund
Project title	RADS-Train: A quality improvement and training initiative to improve adherence to ACR's Reporting and Data Systems (RADS)
Annual direct costs	\$99,650
Duration of support	2019-2020
Name of Principal Investigator	Victoria Chernyak, MD MS and S. Goldberg-Stein, MD
Role	Co-PI
Project Goals	To develop an interactive teaching module on LI-RADS consisting of both didactic and case-based activities.

11. Educational Contributions

Precepting

Clinical teaching of radiology residents	Department of Radiology CUIMC NYC, NY	7/2024-current
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Clinical teaching of fellows in Abdominal Imaging and Abdominal MRI	Department of Radiology CUIMC NYC, NY	7/2024-current
Clinical teaching of radiology residents	Department of Radiology MSKCC NYC, NY	7/2022-6/2024
Clinical teaching of fellows in Oncologic Imaging	Department of Radiology MSKCC NYC, NY	7/2022-6/2024
Clinical teaching of radiology residents at BIDMC	Department of Radiology BIDMC Boston, MA	4/2021-6/2022
Clinical teaching of fellows in Abdominal Imaging and Abdominal MRI	Department of Radiology BIDMC Boston, MA	4/2021-6/2022
Clinical teaching of radiology residents	Department of Radiology Montefiore Medical Center Bronx, NY	7/2007-3/2021
Clinical teaching of fellows in Abdominal Imaging and Abdominal MRI	Department of Radiology Montefiore Medical Center Bronx, NY	7/2007-3/2021

Didactic Teaching

LI-RADS: Case-based review Radiology residency lecture series	Department of Radiology WCM/MSKCC NYC, NY	2023
LI-RADS: Introduction Radiology Fellow lecture series	Department of Radiology MSKCC NYC, NY	2022
Practical approach to LI-RADS CT/MRI Algorithm	Radiology residency lecture series Department of Radiology BIDMC Boston, MA	2021
Benign liver lesions on MRI	Radiology residency lecture series Department of Radiology BIDMC Boston, MA	2021
Assessment of Pelvic Floor Dysfunction with MRI	Urogynecology Fellow Lecture Series Department of Obstetrics and Gynecology Montefiore Medical Center	2021

	Bronx, NY	
Prostate MRI and PI-RADS	Radiation Oncology Resident Lecture Series Department of Radiation Oncology Montefiore Medical Center Bronx, NY	2020
OPTN vs LI-RADS v2018: Impact on staging	Department of Surgery Transplant lecture series Montefiore Medical Center Bronx, NY	2019
MRI of the prostate cancer	Department of Radiation Oncology Montefiore Medical Center Bronx, NY	2019
Tips and Tricks for efficient Pubmed Search and EndNote use	Department of Radiology Academic Leadership Series Montefiore Medical Center Bronx, NY	2019
Academic Promotions Process at AECOM	Department of Radiology Academic Leadership Series Montefiore Medical Center Bronx, NY	2019
MR Defecography	Department of Gastroenterology Montefiore Medical Center Bronx, NY	2018
Imaging Appearances of Various Liver Lesions	Pediatric Hepatology Lecture Series Department of Pediatrics Montefiore Medical Center Bronx, NY	2017
Basics of Abdominal MR Imaging	Radiation Oncology Resident Lecture Series Department of Radiation Oncology Montefiore Medical Center Bronx, NY	2016
Prostate MRI and PI-RADS	Radiation Oncology Resident Lecture Series Department of Radiation Oncology Montefiore Medical Center Bronx, NY	2014

Imaging Modalities in Screening of Hepatocellular Carcinoma	Transplant Lecture Series, Division of Transplant Surgery Montefiore Medical Center Bronx, NY	2012
Imaging Modalities in Screening of Hepatocellular Carcinoma	Department of Gastroenterology Montefiore Medical Center Bronx, NY	2012
MR Defecography in Evaluation of Pelvic Floor Disorders	Department of Gastroenterology Montefiore Medical Center Bronx, NY	2012
Dynamic Pelvic Floor MRI Evaluation of Pelvic Floor Dysfunction	Department of Urology Montefiore Medical Center Bronx, NY	2012
Pelvic Floor Evaluation with Dynamic MRI	Department of Obstetrics and Gynecology Albert Einstein College of Medicine Bronx, NY	2009
Resident lecture (didactic and case-based): One lecture per month	Department of Radiology Montefiore Medical Center Bronx, NY	2007-2021

Advising and Mentorship

Current Mentees

<i>Name</i>	Maria El Homsy
<i>Site/Position</i>	Memorial Sloan Kettering Cancer Center, Assistant Member
<i>Mentoring Period</i>	2024-current
<i>Project/Accomplishments</i>	Project: LI-RADS application in a setting of advanced primary liver cancer
<i>Current Position</i>	Assistant Member, MSKCC
<i>Type of Supervision</i>	Research
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<i>Name</i>	Wyanne Law
<i>Site/Position</i>	Memorial Sloan Kettering Cancer Center, Fellow
<i>Mentoring Period</i>	2023-current
<i>Project/Accomplishments</i>	Project: Imaging features of proliferative vs Nonproliferative HCC
<i>Current Position</i>	Assistant Member, MSKCC
<i>Type of Supervision</i>	Research

Past Mentees

<i>Name</i>	Tae Hyung Kim
<i>Site/Position</i>	Memorial Sloan Kettering Cancer Center
<i>Mentoring Period</i>	2023-2024
<i>Project/Accomplishments</i>	Project: Meta-analysis of Macromolecular Massive HCC imaging features
<i>Current Position</i>	Assistant Member, MSKCC
<i>Type of Supervision</i>	Research

<i>Name</i>	Abraham Bezuidenhout
<i>Site/Position</i>	Assistant Professor of Radiology, Harvard Medical School; BIDMC
<i>Mentoring Period</i>	1/1/2022-12/2023
<i>Project/Accomplishments</i>	Faculty mentorship program <ul style="list-style-type: none"> - Mentorship through grant funding application - Sponsorship for international conference faculty participation
<i>Current Position</i>	<i>Academic promotion to Assistant Professor (achieved in 2023)</i>
<i>Type of Supervision</i>	Research, clinical, leadership

<i>Name</i>	Charissa Kim
<i>Site/Position</i>	PGY-2
<i>Mentoring Period</i>	1/1/2022 – 6/2022
<i>Project/Accomplishments</i>	Correlation of pathologic subtypes of HCC with non-LI-RADS imaging features
<i>Current Position</i>	Mini grant submission
<i>Type of Supervision</i>	Research

<i>Name</i>	Adam Fink
<i>Site/Position</i>	Montefiore Medical Center, PGY-4
<i>Mentoring Period</i>	2020
<i>Project/Accomplishments</i>	Project: Abdominopelvic CT findings in patients with novel coronavirus disease 2019 (COVID-19). <u>Publication:</u> Reference 25
<i>Current Position</i>	Assistant Professor of Radiology, Montefiore Medical Center
<i>Type of Supervision</i>	Research

<i>Name</i>	Gabriel Nemzow
<i>Site/Position</i>	Montefiore Medical Center, PGY-3
<i>Mentoring Period</i>	2020
<i>Project/Accomplishments</i>	Project: Utility of Pelvic CT in Patients Undergoing Surveillance for Hepatocellular Carcinoma <u>Publication:</u> Reference 2
<i>Current Position</i>	Assistant Professor of Radiology, Montefiore Medical Center
<i>Type of Supervision</i>	Research

<i>Name</i>	Orli Haken
<i>Site/Position</i>	Montefiore Medical Center, PGY-3
<i>Mentoring Period</i>	2019
<i>Project/Accomplishments</i>	Project: CT-Based Imaging Features Predictive of Local Progression of Hepatocellular Carcinoma after TACE
<i>Current Position</i>	Staff Radiologist, Valley Health System
<i>Type of Supervision</i>	Research

<i>Name</i>	Jesse Berman
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Site/Position Montefiore Medical Center, PGY-3
Mentoring Period 2018-2019
Project/Accomplishments **Project:** Liver Imaging Reporting and Data System: Frequency of Category Adjustment Using Ancillary Features on CT and MRI in Clinical Practice.
Abstract Presentation: Oral presentation at the Annual Radiologic Society of North America meeting 2018; presented by mentee
Project: Liver Imaging Reporting and Data System v2018: Impact on Categorization and Hepatocellular Carcinoma Staging
Publication: Reference 28

Current Position Staff Radiologist, Kaiser Permanente
Type of Supervision Research

Name **Jason Birnbaum**
Site/Position Montefiore Medical Center, PGY-3
Mentoring Period 2018-2020
Project/Accomplishments **Project:** Positive Perfusion: How Often Does it Affect the PI-RADS Score in Clinical Practice?
Abstract Presentation: Oral presentation at Society of Abdominal Radiology Annual Meeting 2019; presented by mentee
Project: Multicenter Assessment of Interreader Reliability of LI-RADS Version 2018 for MRI and CT
Publication: Reference 12
Project: Prevalence of LI-RADS v2018 Categories on CT and MRI Done for Hepatocellular Carcinoma Screening in High-risk Patients
Abstract Presentation: Oral presentation at the Annual Radiologic Society of North America meeting 2020; presented by mentee
Publication: Reference 10
Project: What Proportion of Clinically Reported LI-RADS 5 Observations Do Not Meet LI-RADS 5 Criteria?
Abstract Presentation: al presentation at the Annual Radiologic Society of North America meeting 2020; presented by mentee
Publication: Reference 18

Current Position Under my supervision, Dr. Birnbaum joined the LI-RADS Steering Committee as a member-in-training
Type of Supervision Assistant Professor, CUIMC
 Research, leadership

Name **Jeremy Ganelis**
Site/Position Montefiore Medical Center, PGY-2
Mentoring Period 2015-2017
Project/Accomplishments **Project:** Impact of a structured report template on the quality of CT and MRI reports for hepatocellular carcinoma diagnosis.
Publication: Reference 33
Current Position Radiology Attending, Einstein Healthcare
Type of Supervision Research

<i>Name</i>	Kate Fruitman
<i>Site/Position</i>	College student, NYU
<i>Mentoring Period</i>	2015-2017
<i>Project/Accomplishments</i>	Project: Effect of threshold growth as a major feature on LI-RADS categorization. <u>Publication:</u> Reference 32

Project: Liver Imaging Reporting and Data System v2018: Impact on Categorization and Hepatocellular Carcinoma Staging.
Publication: Reference 28

<i>Current Position</i>	Medical student, Weil Cornell School of Medicine
<i>Type of Supervision</i>	Research

<i>Name</i>	Mariya Kobi
<i>Site/Position</i>	Montefiore Medical Center, Junior faculty
<i>Mentoring Period</i>	2015-2020
<i>Project/Accomplishments</i>	Project: Patients 65 years and older with incidental pancreatic cysts: Is there a relationship between all-cause mortality and imaging follow-up? <u>Publication:</u> Reference 38

Project: Pancreatic cysts: What imaging characteristics are associated with development of pancreatic ductal adenocarcinoma?
Publication: Reference 37

Project: Limitations of GD-EOB-DTPA-enhanced MRI: can clinical parameters predict suboptimal hepatobiliary phase?
Publication: Reference 35; mentee 1st author

Project: Impact of a structured report template on the quality of CT and MRI reports for hepatocellular carcinoma diagnosis.
Publication: Reference 33

<i>Current Position</i>	Project: Effect of threshold growth as a major feature on LI-RADS categorization. <u>Publication:</u> Reference 32 Former Associate Residency Program Director; Abdominal Imaging Fellowship Director; Interim Section Chief – Division of Abdominal Imaging
<i>Type of Supervision</i>	Current: Associate Professor of Radiology, CUIMC Research, clinical, teaching, leadership

<i>Name</i>	Mansi Shah
<i>Site/Position</i>	Montefiore Medical Center, PGY-4
<i>Mentoring Period</i>	2014-2016
<i>Project/Accomplishments</i>	Project: Transient arterial phase respiratory motion-related artifact in MR imaging of the liver: an analysis of four different gadolinium-based contrast agents. <u>Abstract Presentation:</u> Oral presentation at American Roentgen Ray Society Annual Meeting 2015; presented by mentee

<i>Current Position</i>	<u>Publication</u> : Reference 34; mentee 1 st author
<i>Type of Supervision</i>	Radiologist, University Radiology Group Research
<i>Name</i>	Amy Law
<i>Site/Position</i>	Montefiore Medical Center, PGY-2
<i>Mentoring Period</i>	2014-2015
<i>Project/Accomplishments</i>	Project : LI-RADS: Discordance between CT and gadoxetate-enhanced MR for detection of hepatocellular carcinoma major features <u>Abstract Presentation</u> : Oral presentation at American Roentgen Ray Society Annual Meeting 2016; presented by mentee <u>Publication</u> : Reference 30
<i>Current Position</i>	Radiologist, CP Advanced Imaging
<i>Type of Supervision</i>	Research
<i>Name</i>	Anirudh Paspulati
<i>Site/Position</i>	Montefiore Medical Center, PGY-3
<i>Mentoring Period</i>	2014-2015
<i>Project/Accomplishments</i>	Project : Can Hepatobiliary Phase and T2W Alone Exclude HCC? <u>Abstract Presentation</u> : Oral presentation at American Roentgen Ray Society Annual Meeting 2016; presented by mentee
<i>Current Position</i>	Radiology Attending, Northwell Health
<i>Type of Supervision</i>	Research
<i>Name</i>	David Ginsburg
<i>Site/Position</i>	Montefiore Medical Center, PGY-3
<i>Mentoring Period</i>	2013-2015
<i>Project/Accomplishments</i>	Project : Diagnosis of acute cholecystitis: why do patients get multiple studies? <u>Abstract Presentation</u> : Oral presentation at American Roentgen Ray Society Annual Meeting 2015; presented by mentee <u>Publication</u> : Reference 39; mentee 1 st author
<i>Current Position</i>	Radiologist, Hudson Valley Radiology Associates
<i>Type of Supervision</i>	Research
<i>Name</i>	Alexander Gavlin
<i>Site/Position</i>	Montefiore Medical Center, PGY-3
<i>Mentoring Period</i>	2013-2015
<i>Project/Accomplishments</i>	Project : Diagnostic Yield of Abdominal CT in Patients with Sickle Cell Disease Presenting to the Emergency Department for Evaluation of Abdominal Pain. <u>Abstract Presentation</u> : Oral presentation at American Roentgen Ray Society Annual Meeting 2015; presented by mentee
<i>Current Position</i>	Assistant Professor of Radiology, Weil Cornell Medical Center
<i>Type of Supervision</i>	Research
<i>Name</i>	Jenna Le
<i>Site/Position</i>	Montefiore Medical Center, PGY-3
<i>Mentoring Period</i>	2013-2015
<i>Project/Accomplishments</i>	Project : T1-Hyperintense Renal Lesions: Can High Signal Predict Lack of Enhancement?

<i>Current Position</i>	<u>Abstract Presentation</u> : Oral presentation at American Roentgen Ray Society Annual Meeting 2015; presented by mentee
<i>Type of Supervision</i>	<u>Publication</u> : Reference 40; mentee 1 st author Assistant Professor of Radiology, Montefiore Medical Center Research

<i>Name</i>	Yonah Esterson
<i>Site/Position</i>	Albert Einstein College of Medicine, MS-4
<i>Mentoring Period</i>	2013-2014
<i>Project/Accomplishments</i>	Project : Clinical factors associated with improved parenchymal liver enhancement on Gd-EOB-DTPA-enhanced MRI with extended delay time in patients with parenchymal liver disease. <u>Abstract Presentation</u> : Oral presentation at American Roentgen Ray Society Annual Meeting 2014; presented by mentee <u>Publication</u> : Reference 41; mentee 1 st author
<i>Current Position</i>	Clinical Assistant Professor, University of Maryland School of Medicine
<i>Type of Supervision</i>	Research

<i>Name</i>	Milana Flusberg
<i>Site/Position</i>	Montefiore Medical Center, Junior faculty
<i>Mentoring Period</i>	2013-2018
<i>Project/Accomplishments</i>	Project : Improved parenchymal liver enhancement with extended delay on Gd-EOB-DTPA-enhanced MRI in patients with parenchymal liver disease: associated clinical and imaging factors. <u>Publication</u> : Reference 41 Project : T1-hyperintense renal lesions: can high signal predict lack of enhancement? <u>Publication</u> : Reference 40 Project : Diagnosis of acute cholecystitis: why do patients get multiple studies? <u>Publication</u> : Reference 39 Project : Patients 65 years and older with incidental pancreatic cysts: Is there a relationship between all-cause mortality and imaging follow-up? <u>Publication</u> : Reference 38; mentee 1 st author Project : Pancreatic cysts: What imaging characteristics are associated with development of pancreatic ductal adenocarcinoma? <u>Publication</u> : Reference 37 Project : Transient arterial phase respiratory motion-related artifact in MR imaging of the liver: an analysis of four different gadolinium-based contrast agents. <u>Publication</u> : Reference 34 Project : Impact of a structured report template on the quality of CT and MRI reports for hepatocellular carcinoma diagnosis. <u>Publication</u> : Reference 33; mentee 1 st author

Project: Effect of threshold growth as a major feature on LI-RADS categorization.

Publication: Reference 32

Project: Liver Imaging Reporting and Data System: Discordance between CT and gadoxetate-enhanced MR for detection of hepatocellular carcinoma major features.

Abstract Presentation: Oral presentation at American Roentgen Ray Society Annual Meeting 2016; presented by mentee

Publication: Reference 30

Project: Liver Imaging Reporting and Data System v2018: Impact on Categorization and Hepatocellular Carcinoma Staging.

Publication: Reference 28

Current Position

Associate Residency Program Director;
Associate Professor of Radiology, CUIMC

Type of Supervision

Research, clinical, leadership

Name

Jocelyn Scheinert

Site/Position

Montefiore Medical Center, PGY-4

Mentoring Period

2012

Project/Accomplishments

Project: Renal parenchymal contrast retention on unenhanced CT in patients after transcatheter arterial chemoembolization of hepatic tumors.

Abstract Presentation: Oral presentation at American Roentgen Ray Society Annual Meeting 2012; presented by mentee

Project: High attenuation ascites on unenhanced CT following transcatheter hepatic arterial chemoembolization.

Abstract Presentation: Oral presentation at Society of GI Radiologists/Society of Uroradiologists (SGR/SUR) Annual Meeting 2012; presented by mentee

Current Position

Radiologist, Mid-Atlantic Permanente Medical Group

Type of Supervision

Research

Name

Robert J. Dym

Site/Position

Montefiore Medical Center, PGY-6

Mentoring Period

2010-2011

Project/Accomplishments

Project: MR imaging of renal collecting system with gadoxetate disodium: feasibility for MR urography.

Abstract Presentation: Oral presentation at Society of GI Radiologists/Society of Uroradiologists (SGR/SUR) annual meeting 2011; presented by mentee

Publication: Reference 46; mentee 1st author

Current Position

Section Chief, Division of ED Radiology; Associate Professor of Radiology, Rutgers Health UMDNJ

Type of Supervision

Research

Name

Jane Kim

Site/Position

Montefiore Medical Center, PGY-4

Mentoring Period

2010-2011

<i>Project/Accomplishments</i>	Project: Hepatic enhancement during the hepatobiliary phase after gadoxetate disodium administration in patients with chronic liver disease: The role of laboratory factors. <u>Publication:</u> Reference 49
<i>Current Position</i>	Radiology Attending, Children's National Hospital
<i>Type of Supervision</i>	Research

<i>Name</i>	Viktoriya Paroder
<i>Site/Position</i>	Montefiore Medical Center; Resident/Fellow/Junior Faculty
<i>Mentoring Period</i>	2009-2017
<i>Project/Accomplishments</i>	Project: Comparison of CT-Guided Core Needle Biopsy and Fine Needle Aspiration in the Abdomen and Pelvis <u>Abstract Presentation:</u> Oral presentation at European Society of Uroradiology Annual Meeting 2010; mentee 2 nd author Oral presentation at the Annual Radiology Resident Research Day Project: Patients 65 years and older with incidental pancreatic cysts: Is there a relationship between all-cause mortality and imaging follow-up? <u>Abstract Presentation:</u> Oral presentation at Radiological Society of North America Annual Meeting 2014; presented by mentee <u>Publication:</u> Reference 38 Project: Limitations of GD-EOB-DTPA-enhanced MRI: can clinical parameters predict suboptimal hepatobiliary phase? <u>Publication:</u> Reference 35 Project: Transient arterial phase respiratory motion-related artifact in MR imaging of the liver: an analysis of four different gadolinium-based contrast agents. <u>Publication:</u> Reference 34
<i>Current Position</i>	Director, Rockefeller Pavilion Imaging Center; Director, esophageal and gastric DMT, MSKCC
<i>Type of Supervision</i>	Associate Professor of Radiology, Weil Cornell Medical Center Research, clinical, teaching, leadership

<i>Name</i>	Erica Poletto
<i>Site/Position</i>	Montefiore Medical Center, PGY-4
<i>Mentoring Period</i>	2009
<i>Project/Accomplishments</i>	Project: Meso-aortic Narrowing of the Left Renal Vein on CT Angiography in an Asymptomatic Adult Population: a Normal Finding, not a Nutcracker Syndrome <u>Abstract Presentation:</u> Oral presentation at European Society of Uroradiology Annual Meeting 2010; mentee 1 st author Oral presentation at the Annual Radiology Resident Research Day
<i>Current Position</i>	Pediatric radiology fellowship program director, St. Christopher Hospital for Children
<i>Type of Supervision</i>	Assistant professor Drexel University College of Medicine Research

<i>Name</i>	Vikash Panghaal
<i>Site/Position</i>	Montefiore Medical Center, PGY-4

<i>Mentoring Period</i>	2009
<i>Project/Accomplishments</i>	Project: Adnexal Involvement in Patients with Diverticulitis: CT Features <u>Abstract Presentation:</u> Scientific abstract presentation at Society of GI Radiologists/Society of Uroradiologists (SGR/SUR) Annual Meeting 2009, presented by mentee <u>Publication:</u> Reference 53; mentee 1 st author
<i>Current Position</i>	Radiology Attending, CareMount Medical, NY
<i>Type of Supervision</i>	Research

12. Report of Clinical Care and Public Health Interventions

Clinical Innovations

Liver Imaging Reporting and Data System:

2016-current

Background

Liver Imaging Reporting and Data System (LI-RADS) is a standardized system for performing and interpretations of imaging in patients with or at risk for hepatocellular carcinoma (HCC). The initial version of LI-RADS was released in 2011. LI-RADS comprises of multiple working groups, which are overseen by the Steering Committee.

I have joined the LI-RADS Hepatobiliary Agents (HBA) Working Group in 2013, and actively contributed to the development of initial guidelines of HBA use in LI-RADS. I became a member of the Steering Committee in 2016.

LI-RADS Steering Committee

I joined the Steering Committee in 2016, and became a member of a v2017 Working Group, a subgroup of the Steering Committee that worked on creation of LI-RADS v2017. In one year, I became a co-chair of this working group, and, along with Dr. Claude Sirlin from UCSD, I co-led development of v2017 version, and creation of v2017 Core documents.

In February 2018, the leadership of American Association for the Study of Liver Diseases (AASLD) offered to incorporate LI-RADS into its guidance documents, provided a change to the criteria for LR-5 (Definite HCC) would be introduced. I co-led emergency meetings of the LI-RADS Steering Committee, creating literature searches and documents supporting the discussions. After the proposed changes were approved, I co-led the update of the documents to create LI-RADS v2018 Core materials. In August 2018, LI-RADS was officially adopted into AASLD HCC Practice Guidance (Marrero et al. *Hepatology*. 2018 Aug;68(2):723-750. doi: 10.1002/hep.29913. PMID: 29624699). I was the first author on the editorial in *Radiology*, announcing the release of v2018, providing rationale for its creation, and highlighting diagnostic criteria for LI-RADS CT/MRI, CEUS, US and Treatment Response algorithms (Reviews and Editorials Section Ref 26); this editorial received 455 citations as of November 2022, and is most highly cited manuscript in *Radiology* in 2020. The LI-RADS v2018 Core is available for free on the ACR website (<https://www.acr.org/-/media/ACR/Files/RADS/LI-RADS/LI-RADS-2018-Core.pdf>); the site has received 69,498 visits between August 1, 2018 and

February 19, 2021.

As the result of my dedication, drive and ongoing commitment to LI-RADS, I was appointed the vice chair of the LI-RADS Steering Committee in July 2018. I became a co-chair of the Steering Committee in June 2019, and the chair of the Steering Committee in June 2020. As the chair of the Steering Committee, I set the vision for the future development of LI-RADS, and lead multinational consortium of over 250 experts from over 100 institutions from 30 countries as we continue to improve the system and expand to addresses the entire spectrum of liver cancer imaging. Additionally, I am working with leaders of national organizations (AASLD and Organ Procurement and Transplantation Network [OPTN]), as well as international organizations (such as European Association for the Study of the Liver [EASL], Korean Radiologic Society, Asian Pacific Association for the Study of the Liver [APASL]), and we are making strides towards a long-term goal of development of a unified diagnostic algorithm, which could be adapted around the world. Finally, I am the sole diagnostic radiologist on the AASLD Practice Parameter HCC Expert Panel. As the member of this panel and the current leader of LI-RADS, I successfully lobbied for LI-RADS to be incorporated into the AASLD-approved practice parameter metrics. This approval will promote clinical adoption of LI-RADS by centers across the United States.

My research contributed to the refinement of LI-RADS. I led the study (Ref 27) which demonstrated the utility of threshold growth as a major feature of LI-RADS, and as a result of that, threshold growth was retained as a major feature for diagnosis of liver cancer, despite some colleagues advocating for its removal. My other studies have impacted future development of LI-RADS: Ref 29 demonstrated the considerable discordance of categorization between the CT and MRI, likely needing different algorithms for these modalities. Additionally, we studied the impact of LI-RADS v2018 on HCC staging by comparing it to staging based on OPTN criteria (Ref 31). Future releases of LI-RADS, and potential incorporation of LI-RADS into OPTN, will be shaped by these data.

LI-RADS Manual

As the co-chair of the v2017/v2018 Writing Group, I co-led the development of the LI-RADS Manual by leading team meetings, coordinating the teams assigned to different topics, distributing material for critical feedback, and collecting comments and suggestions from the group. As the first author of five chapters (Other (media, podcasts, etc.) Section, Ref 4, 14-17), I led the teams assigned to these topics, and was the primary creator of the materials for these chapters. As the co-editor of the entire manual (Other (media, podcasts, etc.) Section, Ref 1), I synthesized materials and feedback received from all contributors, and reviewed and edited every page of the manual prior to its final release. The LI-RADS v2018 manual consists of 823 pages covering broad topics of liver imaging (e.g., liver anatomy, cirrhosis, hepatocarcinogenesis, cirrhosis-associated lesions, HCC staging), and LI-RADS-specific topics (e.g., treatment response, technique, use of HBAs, and imaging features). It is available free of charge through the ACR website (<https://www.acr.org/-/media/ACR/Files/Clinical-Resources/LIRADS/LI-RADS-2018-Manual-5Dec18.pdf>). Between January 1, 2019 and February 19, 2021, the website for LI-RADS Manual has received 9,865 visits.

LI-RADS Lexicon and Writing Group

Unification of imaging criteria in patients with or at risk for HCC requires strong scientific evidence supporting the changes. Currently, data synthesis can be hindered by the variability of the terminology used in various studies. For example, slight variations in the definitions of the imaging features between studies may result in the pooled data that is too heterogeneous to make valid conclusions. To counteract that, I co-chair the LI-RADS Lexicon and Writing Group, which is developing a clear and concise lexicon that can be adopted by the scientific community worldwide. This lexicon contains rigorously vetted terms utilized in liver imaging, and, once adapted by the scientific community, will lead to accumulation of more homogeneous data in the future. The initial version of the lexicon was released in January 2020, and is available on the ACR website (<https://www.acr.org/-/media/ACR/Files/RADS/LI-RADS/Lexicon-Table-2020.pdf>); the page received 4,862 visits between its release and February 19, 2021. The updated lexicon is going through the final stages of review and approval by the Steering Committee, and will be released in March 2021.

LI-RADS Educational Module

Education is crucial for dissemination of LI-RADS and its implementation in routine clinical care in settings beyond specialty tertiary academic centers. I am actively involved in national and international educational efforts (Ref 35 and 37) on LI-RADS. Additionally, I was a co-PI on the ACR Innovation grant. Through this grant, I developed the LI-RADS v2018 training module. The module can be accessed through the ACR site, and it includes pre-test, didactic educational materials, and a post-test. Upon completion, the user is awarded 5 SAM CME credits. Between January 1, 2019 and February 15, 2021, 518 participants have completed the LI-RADS education module.

ACR Assist LI-RADS Module

Standardization of imaging criteria is only one piece of the puzzle, and it needs to be supported by clear and standardized reporting. One of my studies demonstrated that the use of structured reporting for HCC results in consistent and unequivocal reporting of all needed elements in nearly 100% of cases (Ref 26).

The perceived complexity of LI-RADS may be prohibitive to adopting LI-RADS into a busy clinical practice, particularly in centers without high liver imaging expertise. ACR Assist, common data elements (CDE) decision support tool, was created to improve clinical adoption of -RADS. I worked with the ACR IT team to create a LI-RADS ACR Assist Module. Once the schema was completed, I vetted all iterations, and confirmed 100% fidelity of the module to the LI-RADS v2018 algorithms. The LI-RADS ACR Assist module was finalized in August 2019, was validated in clinical environment in December of 2020, and was released to commercial dictation software companies (Nuance and M-Modal) for clinical implementation.

Impact of LI-RADS:

The impact of LI-RADS has been transformative. The leading system for diagnosing liver cancer worldwide, LI-RADS is now used routinely for clinical care throughout the United States and in growing parts of Latin America, Europe, Asia, and Oceania. It has been translated into Spanish, French, Italian, Portuguese,

German, Japanese, Korean, Simplified Chinese, and Traditional Chinese. To date, over 380 peer-reviewed manuscripts on LI-RADS have been published. Major radiology societies such as the Radiological Society of North America have organized entire scientific sessions on LI-RADS. Abdominal Radiology, the flagship journal for the leading scientific society for abdominal imaging, dedicated its entire January 2018 issue to LI-RADS. The 2017 NCCN guidelines for liver cancer included LI-RADS. In 2018, the AASLD, the most important and influential hepatology organization worldwide, endorsed LI-RADS for managing liver cancer. UpToDate, a web-based clinical decision support resource, also endorsed LI-RADS in 2018.

Use of Gadoxetate (Eovist)-enhanced MR imaging of the liver:

2008

I championed implementation of gadoxetate (Eovist) in Montefiore, as soon as it was approved for clinical use in United States in 2008. I developed and optimized MR protocols. As use of gadoxetate in setting of cirrhosis was an uncommon practice at the time, the timing of the imaging sequences was worked out de novo; since then, Montefiore became one of the leading centers of use of Eovist in patients with cirrhosis in Northeast USA. To date, the use of gadoxetate in the setting of cirrhosis remains controversial. Given my extensive clinical expertise in this subject, I have provided consults to representatives of various institutions (e.g., Memorial Sloan Kettering Center, Columbia University, Emory University, Mayo Clinic Arizona, University of Texas Southwestern, University of California San Diego, Westchester Medical Center) on interpretation of complicated gadoxetate cases and nuances of MR protocols. I have given seven national presentations on the use of gadoxetate in patients with parenchymal liver disease.

In order to optimize the use of gadoxetate in the setting of cirrhosis, I have conducted research that explored factors affecting the imaging quality of the arterial phase (Ref 25) and hepatobiliary phase (Ref 10 and 18) when using gadoxetate in patients with parenchymal liver disease/cirrhosis. The cutoff of direct bilirubin established by Ref 18 has been adopted in clinical care by Montefiore and implemented in other institutions (e.g., Westchester Medical Center, Memorial Sloan Kettering Center, UCSD).

2006

Preoperative imaging of anterior abdominal wall perforators prior to DIEP flap using MRI:

I collaborated with a team of plastic surgeons at Montefiore Medical Center to establish a first program of preoperative assessment prior to deep inferior epigastric perforator (DIEP) flap using MRI. I developed the original MRI protocol, and came up with a 3D reconstruction approach that mapped out location of the perforators on 3D image of patient's anterior abdominal wall. This image was used by surgeons to localize perforators intraoperatively.

I was the first author on the first study in the world that assessed utility of MRI in preoperative assessment of DIEP patients (Ref 4). The study demonstrated that perforators detected on MRI were located during surgery in the specified location, and the perforators that were marked as the best (based on size and location) by MRI coincided with perforators chosen during graft harvest. The surgical outcomes of our program were published together with plastic surgeon colleagues in Ref 7.

Our MRI DIEP evaluation program became successful, and I consulted centers in New York City and nationally (e.g., NYU, Cornell, Columbia, Emory) on the protocol, as they established similar programs. Use of MRI in the preoperative assessment of DIEP patients has since become a widely utilized technique. A recent meta-analysis demonstrated that of all available modalities (hand-held doppler, duplex US, CTA, MRI and thermography), MRI has the highest agreement between preoperative imaging and intraoperative perforator selection (mean 97% [95% CI 86–100%]) (Kiely et al. J Plast Reconstr Aesthet Surg. 2020 Dec 10;S1748-6815(20)30670-7. doi: 10.1016/j.bjps.2020.12.005).

13. Publications:

Peer-reviewed Research Articles:

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2. Jiang H, Li B, Zheng T, Qin Y, Wu Y, Wu Z, Ronot M, **Chernyak V**, Fowler KJ, Bashir MR, Chen W, Wang YC, Ju S, Song B. MRI-based prediction of microvascular invasion/high tumor grade and adjuvant therapy benefit for solitary HCC ≤ 5 cm: a multicenter cohort study. *Eur Radiol*. 2024 Dec 19. doi: 10.1007/s00330-024-11295-1. Epub ahead of print. PMID: 39702639.
3. Lee S, Kim YY, Shin J, Shin H, Sirlin CB, **Chernyak V**. Performance of LI-RADS category 5 vs combined categories 4 and 5: a systemic review and meta-analysis. *Eur Radiol*. 2024 Nov;34(11):7025-7040. doi: 10.1007/s00330-024-10813-5 PMID: 38809263.
4. Shahbazian H, Raja K, Sirlin C, Nemzow G, Borhani A, Attari MA, Kamel IR, **Chernyak V**. Utility of pelvic CT in patients undergoing surveillance for hepatocellular carcinoma: A retrospective multi-institutional study. *Abdom Radiol (NY)*. 2024 Nov;49(11):4125-4130. doi: 10.1007/s00261-024-04362-0. PMID: 38831071.
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7. Koch V, Gotta J, **Chernyak V**, Cengiz D, Torgashov K, Eichler K, Vilgrain V, Martin SS, Ziegengast NS, Konrad P, Booz C, Yel I, D'Angelo T, Mahmoudi S, Scholtz JE, Bernatz S, Alizadeh LS, Cimprich M, Solim LA, Thalhammer A, Gruber-Rouh T, Hammerstingl RM, Zeuzem S, Finkelmeier F, Pathil-Warth A, Onay M, Kinzler MN, Darwish O, Annio G, Taylor SA, Wild P, Dahmer I, Herrmann E, Almansour H, Vogl TJ, Gruenewald LD, Sinkus R. Biomechanical Assessment of Liver Integrity: Prospective Evaluation of Mechanical Versus

Acoustic MR Elastography. *J Magn Reson Imaging*. 2024 Aug 21. doi: 10.1002/jmri.29560. Epub ahead of print. PMID: 39165139.

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5. **Chernyak, V**. Non-traumatic Emergent Genitourinary Conditions. In: Patlas, M.N., Katz, D.S., Scaglione, M. (eds) *Atlas of Emergency Imaging from Head-to-Toe*. Springer, Cham. 2021; doi: 10.1007/978-3-030-44092-3_30-1.
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Guidelines:

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14. Peterson CM, McNamara MM, Kamel IR, Al-Refaie WB, Arif-Tiwari H, Cash BD, **Chernyak V**, Goldstein A, Grajo JR, Hindman NM, Horowitz JM, Noto RB, Porter KK, Srivastava PK, Zaheer A, Carucci LR. ACR Appropriateness Criteria® Right Upper Quadrant Pain. *J Am Coll Radiol. 2019 May;16(5S):S235-S243. doi: 10.1016/j.jacr.2019.02.013*
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16. Elsayes KM, Kielar AZ, Elmohr MM, **Chernyak V**, Masch WR, Furlan A, Marks RM, Cruite I, Fowler KJ, Tang A, Bashir MR, Hecht EM, Kamaya A, Jambhekar K, Kamath A, Arora S, Bijan B, Ash R, Kassam Z, Chaudhry H, McGahan JP, Yacoub JH, McInnes M, Fung AW, Shanbhogue K, Lee J, Deshmukh S, Horvat N, Mitchell DG, Do RKG, Surabhi VR, Szklaruk J, Sirlin CB. White paper of the Society of Abdominal Radiology hepatocellular carcinoma diagnosis disease-focused panel on LI-RADS v2018 for CT and MRI. *Abdom Radiol (NY). 2018 Oct;43(10):2625-2642. doi: 10.1007/s00261-018-1744-4*

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18. Kaur H, Hindman NM, Al-Refaie WB, Arif-Tiwari H, Cash BD, **Chernyak V**, Farrell J, Grajo JR, Horowitz JM, McNamara MM, Noto RB, Qayyum A, Lalani T, Kamel IR. ACR Appropriateness Criteria® Suspected Liver Metastases. *J Am Coll Radiol*. 2017 May;14(5S):S314-S325. doi: 10.1016/j.jacr.2017.01.037
19. Elsayes KM, Kielar AZ, Agrons MM, Szklaruk J, Tang A, Bashir MR, Mitchell DG, Do RK, Fowler KJ, **Chernyak V**, Sirlin CB. Liver Imaging Reporting and Data System: an expert consensus statement. *J Hepatocell Carcinoma*. 2017 Feb 17;4:29-39. doi: 10.2147/JHC.S125396

Meetings/Invited oral and poster presentations

1. Lee S, Kim Y-Y, Shin, Roh YH, Choi J-Y, Sirlin CB, **Chernyak V**. Differences in Percentage of Hepatocellular Carcinoma and Overall Malignancy in Liver Imaging Reporting and Data System Categories Between CT and MR Imaging with Extracellular Contrast and Gadoteric Acid: A Systematic Review and Meta-Analysis. Scientific abstract presentation. Radiologic Society of North America Annual Meeting 2022.
2. van der Pol CB, Salameh J, Levis B, **Chernyak V**, Sirlin CB, Bashir MR, McInnes M. Liver Reporting And Data System (LI-RADS) Major Features: Individual Patient Data Meta-analysis Of Diagnostic Accuracy Studies For Diagnosis Of Hepatocellular Carcinoma. Scientific abstract presentation. Radiologic Society of North America Annual Meeting 2021.
3. Nemzow G, Sirlin CB, **Chernyak V**. Utility of Pelvic CT in Patients Undergoing Surveillance for Hepatocellular Carcinoma. Scientific poster presentation. Radiologic Society of North America Annual Meeting 2020.
4. Birnbaum JG, Sirlin CB, **Chernyak V**. What Proportion of Clinically Reported LI-RADS 5 Observations Do Not Meet LI-RADS 5 Criteria? Scientific abstract presentation. Radiologic Society of North America Annual Meeting 2020.
5. Birnbaum JG, Kanmaniraja D, Kobi M, Yee J, Sirlin CB, **Chernyak V**. Prevalence of LI-RADS v2018 Categories on CT and MRI Done for Hepatocellular Carcinoma Screening in High-risk Patients. Scientific abstract presentation. Radiologic Society of North America Annual Meeting 2020.
6. Ram R, Flusberg M, Swamy N, **Chernyak V**, Pandey T, Bajaj G, Jambhekar K. How Well Do You Know the Pelvic Floor Anatomy? Educational exhibit. Radiological Society of North America Annual Meeting 2020. Exhibit received Certificate of Merit.
7. Cunha GM, Tang A, Marks RM, Elsayes KM, Cruite IW, Horvat N, Fung AW, Fowler KJ, Sirlin CB, **Chernyak V**. LI-RADS Reporting: Seeing the Forest Through the Trees. Educational exhibit. Radiological Society of North America Annual Meeting 2020.
8. Elmohr MM, Fung AW, van der Pol CB, McInnes MD, Bashir MR, Lee JT, Fowler KJ, Elsayes KM, **Chernyak V**, Sirlin CB, Tang A. LI-RADS: Show Me the Evidence! Educational exhibit. Radiological Society of North America Annual Meeting 2020.
9. Kielar AZ, Oro-Medonte O, Bastawrous S, Elsayes KM, Kamath A, **Chernyak V**. Decision Making When Using LI-RADS: Tips and Tricks to Increase Confidence. Educational exhibit. Radiological Society of North America Annual Meeting 2020.

10. Ash RM, Horvat N, Kamath A, Lee JT, **Chernyak V**, Elsayes KM. LI-RADS Ancillary Features for Improved Detection and Diagnostic Confidence. Educational exhibit. Radiological Society of North America Annual Meeting 2020.
11. Zulfiqar M, Louis S, Chatterjee D, **Chernyak V**, Hecht EM, Bashir MR, Bastati N, Ba-SSalamah A, Sirlin CB, Fowler K. Before Biliary Malignancy: Imaging Features of Premalignant Biliary Lesions and Predisposing Conditions. Educational exhibit. Radiological Society of North America Annual Meeting 2020.
12. Gordon, J. Holder, G. Dellacerra, M. Kobi, V. **Chernyak**. Unusual suspects: Review of uncommon liver lesions. Educational exhibit. European Society of Gastrointestinal and Abdominal Radiology Annual Meeting 2020.
13. Smith AD, Abou Elkassem A, Allen B, Mresh R, Khalaf A, Farag A, Lirette S, Shrestha Y, Williams D, Stevens R, Al-Hawary M, Chamarthi S, Chauhan A, **Chernyak V**, Clark T, Cox K, Digumarthy S, Ehieli W, Ferguson D, Gaballah A, Galgano S, Gandhi D, Lee S, Lee S, Mervak B, Mittal P, Murphy P, Nandwana S, O'Connor S, Patel N, Roda M, Surabhi V, Trace A, Wasnik A, Yacoub J, Zidan A, Anderson MD, Arend R, Brem EA, Dayyani F, Gao X, Goyal G, Hari P, Ho C, Henegan JC, Kratzke R, Meredith RF, McDonald A, Mooradian MR, Leath CA, Lou E, Narkhede M, Nandagopal Asha Nayak L, Paluri R, Rao A, Stringer- Reasor EM, Willey C, Yee D. Comparative effectiveness of AI-assisted vs. standard of care methods in advanced cancer longitudinal response evaluation in a multi-institutional study. Scientific abstract presentation ASCO Annual Meeting, 2020.
14. Allen BC, Abou Elkassem A, Mresh R, Lirette S, Shrestha Y, Giese JD, Stevens R, Williams D, Farag A, Khalaf AM, Al-Hawary MM, Chamarthi SK, Chauhan A, **Chernyak V**, Clark TJ, Cox KL, Digumarthy SR, Ehieli WL, Ferguson DJ, Gaballah AH, Galgano SJ, Gandhi D, Lee S, Lee SI, Mervak BM, Mittal PK, Murphy PM, Nandwana SB, O'Connor SD, Patel NU, Roda MS, Surabhi VR, Trace AP, Wasnik AP, Yacoub JH, Zidan AT, Smith A. Comparative effectiveness of advanced cancer longitudinal response evaluation methods: artificial intelligence-assisted vs. standard-of-care. Scientific abstract presentation. Society of Abdominal Radiology Annual Meeting 2020.
15. Orisamolu1 A, Haken O, Brodin P, English K, Ohri1 N, Kaubisch A, Kinkhabwala A, Tome W.A., Kalnicki S, Garg M.K., **Chernyak V**, Kabarriti R, Guha C. CT-Based Imaging Features Predictive of Local Progression of Hepatocellular Carcinoma after TACE. Scientific abstract presentation. American Society for Radiation Oncology 2019. doi:10.1016/j.ijrobp.2019.06.1983
16. Kobi M, Ricci ZJ, Kanmaniraja D, **Chernyak V**. Many Faces of Lymphoma: Abdominal Manifestations of Extranodal Lymphoma. Educational exhibit. Radiological Society of North America Annual Meeting 2019. Exhibit received Certificate of Merit.
17. Birnbaum J, Kobi M, Kanmaniraja K, Yee J, **Chernyak V**. Positive Perfusion: How Often Does it Affect the PI-RADS Score in Clinical Practice? Scientific abstract presentation. Society of Abdominal Radiology Annual Meeting, 2019.
18. Kanmaniraja D, Flusberg M, Ricci ZJ, Kobi M, **Chernyak V**. Gastrointestinal Manifestations of Systemic Disease – Solve the Rubik's Cube. Educational exhibit. Radiological Society of North America Annual Meeting 2018.
19. Ricci ZJ, Gordon S, **Chernyak V**, Stein MW, Flusberg M, Mazzariol F, Kobi M. Imaging Spectrum of Vaginal Pathologies. Educational exhibit. Radiological Society of North America Annual Meeting 2018.
20. **Chernyak V**, Fowler K, Kielar A, Furlan A, Tang A, Cui J, Papadatos D, Sirlin CB. Cirrhosis – The Double-Edged Sword for CT and MRI Diagnosis of HCC. Educational exhibit. Society of Abdominal Radiology Annual Meeting 2018, Magna Cum Laude award.

21. Berman J, Sirlin CB, **Chernyak V**. Liver Imaging Reporting and Data System: Frequency of Category Adjustment Using Ancillary Features on CT and MRI in Clinical Practice. Scientific abstract presentation. Radiologic Society of North America Annual Meeting 2018.
22. Rai A, Sanghun S, Shifteh K, **Chernyak V**, Kogan-Liberman D, Isasi CR, Rudolph B, Ovchinsky N, Arens R. Multi-Organ Effects of Obstructive Sleep Apnea. Scientific abstract presentation. American Association for Study of Liver Disease National Conference 2018.

Case Reports

1. Bernstein A, Sarungbam J, **Chernyak V**, Rajdev L, Kovac E. Renal vein tumor thrombus from metastatic anal gland adenocarcinoma. *Urol Case Rep*. 2017 Oct 27;16:51-53. doi: 10.1016/j.eucr.2017.10.012
2. Barrera-Vera R, Chiu K, Cohen P, **Chernyak V**, Nevadunsky N. Robotic assisted repair of bilateral fallopian tube prolapse after vaginal hysterectomy. *Obstet Gynecol cases Rev* 2016, 3(1):072; 1-5. doi: 10.23937/2377-9004/1410072
3. Gamss C, Chia F, **Chernyak V**, Rozenblit A. Giant hemorrhagic myelolipoma in a patient with sickle cell disease. *Emerg Radiol*. 2009 Jul;16(4):319-322. doi: 10.1007/s10140-008-0740-3

Thesis

Relationship between incidental pancreatic cystic lesions and the development of pancreatic adenocarcinoma and all-cause mortality (2014).

Other

1. **Chernyak V** & Sirlin CB. Co-Editors. LI-RADS v2018 Manual. <https://www.acr.org/-/media/ACR/Files/Clinical-Resources/LIRADS/LI-RADS-2018-Manual-5Dec18.pdf?la=en>
2. Sirlin CB, **Chernyak V**. Chapter 1: What is LI-RADS®? LI-RADS v2018 Manual. American College of Radiology 2018. <https://www.acr.org/-/media/ACR/Files/Clinical-Resources/LIRADS/Chapter-1-LIRADS-Introduction--What-Mission-Vision.pdf?la=en>
3. Tang A, **Chernyak V**, Hallouch O, Kamaya A, Sirlin CB. Chapter 2: LI-RADS® Populations: Surveillance, Diagnosis, Staging, Treatment Response. LI-RADS v2018 Manual. American College of Radiology 2018. <https://www.acr.org/-/media/ACR/Files/Clinical-Resources/LIRADS/Chapter-2--LIRADS-screening-surveillance-diagnosis-staging.pdf?la=en>
4. **Chernyak V**, Fowler KJ, Sirlin CB, Chapter 3: Liver anatomy. LI-RADS v2018 Manual. American College of Radiology 2018. <https://www.acr.org/-/media/ACR/Files/Clinical-Resources/LIRADS/Chapter-3--Liver-anatomy.pdf?la=en>
5. Sirlin CB, Papadatos D, **Chernyak V**, Cui J, Fowler KJ, Kielar AZ. Chapter 4: Cirrhosis. LI-RADS v2018 Manual. American College of Radiology 2018. <https://www.acr.org/-/media/ACR/Files/Clinical-Resources/LIRADS/Chapter-4-Cirrhosis.pdf?la=en>
6. Sirlin CB, **Chernyak V**, Furlan A, Papadatos D. Chapter 5: Cirrhosis-Associated Lesions and Pseudolesions. LI-RADS v2018 Manual. American College of Radiology 2018. <https://www.acr.org/-/media/ACR/Files/Clinical-Resources/LIRADS/Chapter-5--Cirrhosis-associated-lesions.pdf?la=en>
7. Sirlin CB, **Chernyak V**, Cui J, Narsinh KH, Papadatos D, Santillan CS, Tang A. Chapter 6:

Hepatocarcinogenesis. LI-RADS v2018 Manual. American College of Radiology 2018.

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18. Paroder V, **Chernyak V**. Pitfalls in Female Pelvis MRI. ARRS Categorical Course Syllabus: Pitfalls in Clinical Imaging May 2019.

14. Invited and/or Peer-Selected Presentations at Local, Regional, National or International Levels***Regional***

Diagnosis of liver lesion in high-risk patient: a LI-RADS approach	Columbia Liver Summit 2025	2025
CT/MRI LI-RADS	Grand Rounds, Massachusetts General Hospital and Brigham and Women's Hospital Boston, MA	2022
Outcomes of cirrhosis-associated lesions diagnosed on imaging	Liver Cancer Symposium Beth Israel Deaconess Medical Center, Boston, MA	2022
Multimodality assessment of emergent gynecologic conditions	Grand Rounds (Virtual) Department of Radiology Rutgers University Medical Center	2022
Improving efficiency of email communication	Grand Rounds Brigham and Women's Hospital Boston, MA	2021
Improving (email) communication	Grand Rounds. Beth Israel Deaconess Medical Center Boston, MA	2021
LI-RADS Algorithm	New York Roentgen Society Monthly Resident Session New York, NY	2020
Hepatobiliary agents and LI-RADS: An Update	New York Roentgen Ray Society Annual meeting New York, NY	2019
Pancreatic Cancer: Defining Resectable, Borderline Resectable And Locally Advanced Disease	Advanced Interventional Management (AIM) Symposium New York, NY	2018
Management Implications of LI-RADS Categories	Advanced Interventional Management (AIM) Symposium New York, NY	2018
Pelvic Floor Assessment using Dynamic MRI	Grand Rounds, UMDNJ – University Hospital, Newark, NJ	2018
Common Liver Masses: Enhancement Pattern Recognition	New York Roentgen Society Monthly Resident Session New York, NY	2018
Use of Gadoxetate in Patients with Cirrhosis and its Implications for LI-RADS	Grand Rounds, Jacobi Medical Center Department of Radiology New York, NY	2018
HCC diagnosis and the applications of the LI-RADS algorithm	New York Roentgen Ray Society Annual Meeting New York, NY	2018
Moderator, Resident Session: Body Imaging	New York Roentgen Society Monthly Resident Session New York, NY	2018

MRI Requirements and LI-RADS System for Radiographic Diagnosis of Hepatocellular Carcinoma	Update on Hepatocellular Carcinoma and Liver Transplantation CME Course Milton, NY	2017
MRI for Prostate Cancer	WPH Symposium: Saving the urinary tract—tissue preservation and novel technology, CME Course White Plains, NY	2017
LI-RADS Categorization	Update on Hepatocellular Carcinoma CME Course Nyack, NY	2017
LI-RADS: an MRI Primer	Advanced Interventional Management (AIM) Symposium New York, NY	2017
Use of Gadoxetate in Patients with Cirrhosis and its Implications for LI-RADS	Grand Rounds, Columbia University Department of Radiology New York, NY	2017
Pre-Intervention Imaging: Understanding The Liver Imaging Reporting And Data System (LI-RADS)	Advanced Interventional Management (AIM) Symposium New York, NY	2016
Imaging Assessment of Treatment Response	Advanced Interventional Management (AIM) Symposium New York, NY	2015
Imaging After Loco Regional Therapy: Techniques And Pitfalls	Advanced Interventional Management (AIM) Symposium New York, NY	2014
Imaging Of The Cirrhotic Patient: When Is A Biopsy Indicated?	Advanced Interventional Management (AIM) Symposium New York, NY	2014
Board Review	Department of Radiology Maimonides Medical Center Brooklyn, NY	2013
Board Review	Department of Radiology SUNY Downstate Medical Center Brooklyn, NY	2013
Imaging of Prostate Cancer with MRI	Department of Radiology Grand Rounds, Staten Island University Hospital Staten Island, NY	2013
GI/GU Resident Lecture and Board Review	Department of Radiology St. Vincent's Medical Center Bridgeport, CT	2012
Board Review	Department of Radiology SUNY-Downstate Medical Center Brooklyn, NY	2012
GI/GU Resident Lecture and Board Review	Department of Radiology St. Vincent's Medical Center Bridgeport, CT	2012

Board Review	Department of Radiology Maimonides Medical Center Brooklyn, NY	2012
GI/GU Resident Lecture (monthly) and Board Review	Department of Radiology Bridgeport Hospital Bridgeport, CT	2013-2018
GI/GU Resident Lecture (monthly) and Board Review	Department of Radiology St. Vincent's Medical Center Bridgeport, CT	2012-2018

National

HBP Tumor Board: New HCC Diagnosis	Society of Abdominal Radiology Annual Meeting, Tucson, AZ	2025
Moderator, HBP Tumor Board	Society of Abdominal Radiology Annual Meeting, Tucson, AZ	2025
Unusual liver lesion: Liver neoplasms	Society of Abdominal Radiology Annual Meeting, Tucson, AZ	2025
Pathomolecular and prognostic features of HCC	Radiological Society of North America Annual Meeting, Chicago, IL	2024
Usual and Unusual Liver Lesions: Case based review	Radiological Society of North America Annual Meeting, Chicago, IL	2024
Challenging topics in CT/MRI LI-RADS	Abdominal Section Conference Beth Israel Deaconess Medical Center Boston, MA (Presented virtually)	2024
Natural history of LR-3, LR-4 and LR-5 observations	Hepatobiliary Plenary Session Society of Advanced Body Imaging Annual Meeting Washington, DC	2024
LI-QUAL: Standardizing quality of liver imaging	Society of Abdominal Radiology Annual Meeting Hollywood, FL	2024
<i>Moderator</i> , Plenary Session NASH: Call for action	Society of Abdominal Radiology Annual Meeting Hollywood, FL	2024
<i>Moderator</i> , Scientific Session Clinical Practice Improvement	Society of Abdominal Radiology Annual Meeting Hollywood, FL	2024
Imaging of primary liver malignancies	AIRP Radiology-Pathology course Washington, DC	2024
Case-based review of primary liver malignancies	AIRP Radiology-Pathology course Washington, DC	2024

Challenging liver cases: LI-RADS and beyond	ARRS Annual Meeting Boston, MA	2024
Dynamic MRI of pelvic floor disorders	Diagnostic Imaging Update in Beaver Creek Beaver Creek, Colorado	2023
Enhancement-based pattern approach to diagnosis of common liver lesions	Diagnostic Imaging Update in Beaver Creek Beaver Creek, Colorado	2023
Plenary: Culture-killing attending	Society of Abdominal Radiology Annual Meeting, Austin, Tx	2023
Pathomolecular and imaging prognostic features in HCC	Society of Abdominal Radiology Annual Meeting, Austin, Tx	2023
<i>Moderator</i> , Scientific Session Clinical Practice Improvement	Society of Abdominal Radiology Annual Meeting, Austin, Tx	2023
Liver imaging: A practical guide to solving problems	Hands-on Course moderator Society of Abdominal Radiology Annual Meeting Austin, Tx	2023
Practical approach to CT/MRI LI-RADS	ARRS Annual Meeting Honolulu, HI	2023
Challenging GYN cases	ARRS Annual Meeting Honolulu, HI	2023
MR imaging of sinusoidal obstruction syndrome	Medscape educational seminar ARRS Annual Meeting Honolulu, HI	2023
<i>Moderator</i> , Scientific Session GI Scientific Session	ARRS Annual Meeting Honolulu, HI	2023
Imaging of primary liver malignancies	AIRP Radiology-Pathology course Presented virtually	2023
Case-based review of primary liver malignancies	AIRP Radiology-Pathology course Presented virtually	2023
Panelist, Unknown case panel	Plenary session SABI Annual Meeting Dallas, TX	2023
Hepatic adenomatosis and liver transplantation	Plenary session SABI Annual Meeting Dallas, TX	2023
aMRI Debate: HBP aMRI	Plenary session SABI Annual Meeting Dallas, TX	2023
Improving professional communication:	Grand Rounds	2023

in-person, email and radiology reports	Department of Radiology, UCSD Medical Center San Diego, CA	
Typical and atypical appearances of common benign lesions on MRI	Resident lecture Department of Radiology, UCSD Medical Center San Diego, CA	2023
LI-RADS v2018: Current gaps in knowledge and future directions	San Diego Radiologic Society San Diego, CA	2023
Best of 2023: GU Oncology publications	Radiological Society of North America Annual Meeting, Chicago, IL	2023
Challenging areas in CT/MRI Diagnostic LI-RADS	Radiological Society of North America Annual Meeting, Chicago, IL	2023
LI-RADS CT/MRI Diagnostic Algorithm: Overview	Johns Hopkins Department of Radiology Presented virtually	2023
Assessment of pelvic floor disorders with MR Defecography	Visiting Professor Department of Radiology Stanford University (Virtual)	2022
Board Review: GI Cases	Visiting Professor Department of Radiology Stanford University (Virtual)	2022
Optimizing email and in-person communication	Department of Radiology UCSD (Virtual)	2022
Optimizing team communication	Grand Rounds (Virtual) University of Pennsylvania	2022
Practical approach to CT/MRI LI-RADS	American Roentgen Ray Society (ARRS) Annual Meeting New Orleans, LA	2022
Pathologic, Molecular and Prognostic Radiologic Features of HCC	American Roentgen Ray Society (ARRS) Annual Meeting New Orleans, LA	2022
Maximizing effectiveness of email communication	American Roentgen Ray Society (ARRS) Annual Meeting New Orleans, LA	2022
Pathologic, Molecular and Prognostic Radiologic Features of HCC	Grand Rounds (Virtual) Department of Radiology MD Anderson, Houston, TX	2022
CT/MRI Diagnosis of HCC	American College of Veterinary Internal Medicine (ACVIM) Annual Meeting, Austin, TX (Virtual)	2022

Mastering effective e-mail and in-person communication	Grand Rounds (Virtual) Department of Radiology, Northwestern University, Chicago, IL	2022
Challenging LI-RADS cases: case-based review	Grand Rounds (Virtual) Department of Radiology, Northwestern University, Chicago, IL	2022
Panelist: Multidisciplinary perspectives on LI-RADS for evaluation of HCC	AASLD Webinar	2022
ACR -RADS: Value add	ACR Quality and Safety Conference Washington, DC	2022
Pathomolecular and prognostic imaging features of HCC	SABI Annual Meeting Plenary Session New Orleans, LA	2022
Panelist and organizer: Hepatobiliary Tumor Board	SABI Annual Meeting Plenary Session New Orleans, LA	2022
Hepatic adenomatosis and liver transplantation: Radiologist's perspective	The Liver Meeting AASLD Annual Meeting Washington, DC	2022
LI-RADS: Gaps and future directions	Radiological Society of North America Annual Meeting Chicago, IL	2022
Diagnostic radiology techniques for splanchnic thrombosis	Radiological Society of North America Annual Meeting Chicago, IL	2022
<i>Moderator, Scientific Session</i> Multisystem (New Imaging Advancements in Therapy Response Prediction and Disease Monitoring)	Radiological Society of North America Annual Meeting, Chicago, IL	2022
LI-RADS: Basics and beyond	Radiation Oncology Grand rounds Duke University, Durham, North Carolina	2022
Plenary session: Translating Psyche to Interpersonal Communication	Society of Abdominal Radiology Annual Meeting, Virtual meeting	2021
Plenary session: Pelvic Floor DFP: An Update	Society of Abdominal Radiology Annual Meeting, Virtual meeting	2021
LI-RADS: Practical approach to the algorithm	Society of Abdominal Radiology Annual Meeting, Virtual meeting	2021
<i>Moderator, Scientific Session</i> Liver	Society of Abdominal Radiology Annual Meeting, Virtual meeting	2021

<i>Moderator, Communication</i>	Society of Abdominal Radiology Annual Meeting, Virtual meeting	2021
LI-RADS: Why do we need them?	American Roentgen Ray Society Annual Meeting, Virtual meeting	2021
Use of gadoxetate in patients with chronic liver disease	American Roentgen Ray Society Annual Meeting, Virtual meeting	2021
Acute renal and gynecologic emergencies	American Roentgen Ray Society (ARRS) Annual Meeting, Virtual meeting	2021
LI-RADS CT/MRI Diagnostic Algorithm	Society of Abdominal Radiology DFP Educational Webinar (Virtual)	2021
Typical and atypical appearances of benign liver lesions	ARRS Fall Symposium on Body MRI Virtual meeting	2021
MR Imaging of acute gynecologic conditions	ARRS Fall Symposium on Body MRI Virtual meeting	2021
Optimizing MR protocols for emergency department	ARRS Fall Symposium on Body MRI Virtual meeting	2021
Plenary: Feedback	Society of Advanced Body Imaging (SABI) Annual Meeting Washington, DC	2021
LI-RADS: Past, present and future	Society of Advanced Body Imaging (SABI) Annual Meeting Washington, DC	2021
Plenary: Use of hepatobiliary agents for HCC screening	Society of Advanced Body Imaging (SABI) Annual Meeting Washington, DC	2021
Plenary: Virtual teaching and building communities: Con	Society of Advanced Body Imaging (SABI) Annual Meeting Washington, DC	2021
LI-RADS Lexicon	Radiological Society of North America Annual Meeting, Chicago, IL	2021
Value added by the ACR -RADS	Radiological Society of North America Annual Meeting, Chicago, IL	2021
<i>Moderator, Scientific Session</i> LI-RADS, Oncology and Ultrasound	Radiological Society of North America Annual Meeting, Chicago, IL	2021
LI-RADS: Practical approach to the algorithm	Society of Abdominal Radiology Annual Meeting, Maui, HI	2020
Plenary session: Best Cases of the ECC	Society of Abdominal Radiology Annual	2020

Multi-Peer Review Conference	Meeting, Maui, HI	
LI-RADS Cases for the Experts	Society of Abdominal Radiology Annual Meeting, Maui, HI	2020
Pelvic Floor Imaging	Society of Abdominal Radiology Annual Meeting, Maui, HI	2020
Is It Me Or Them? How To Improve Communication In The Workplace	Society of Abdominal Radiology Annual Meeting, Maui, HI	2020
<i>Moderator</i> , PowerPoint presentation skills	Society of Advanced Body Imaging Educational Webinar (virtual)	2020
Plenary: Structured Reporting to Providers and Benefits of CDEs	ACR Quality and Safety Meeting, Virtual meeting	2020
Building Clinically Useful CDEs	Radiological Society of North America Annual Meeting, Virtual meeting	2020
<i>Moderator</i> , Educational session Cancer Response	Radiological Society of North America Annual Meeting, Virtual meeting	2020
Pelvic floor imaging: Hands-on workshop (Organizer, moderator and presenter)	Society of Abdominal Radiology Annual Meeting, Orlando, FL	2019
LI-RADS: Practical approach to the algorithm	Society of Abdominal Radiology Annual Meeting, Orlando, FL	2019
HCC Diagnosis with LI-RADS: Update, Challenges and Opportunities	Society of Interventional Radiology Annual Meeting, Austin, TX	2019
Use Of Gadaxetate In Patients With Cirrhosis	American Roentgen Ray Society Annual Meeting, Honolulu, HI	2019
Pitfalls In Female Pelvis MRI	American Roentgen Ray Society Annual Meeting, Honolulu, HI	2019
<i>Moderator</i> , Educational Session Pitfalls: Pelvis Mri	American Roentgen Ray Society Annual Meeting, Honolulu, HI	2019
Pitfalls In Female Pelvis MRI	Grand Rounds, Jefferson University Hospital Philadelphia, PA	2019
Li-Rads Ct/Mri Diagnostic Algorithm	Society of Advanced Body Imaging Educational Webinar (virtual)	2019

<i>Moderator</i> , Scientific Session Gastrointestinal: Focal Liver Lesions, Non-HCC	Radiologic Society of North America Annual Meeting, Chicago, IL	2019
Building Clinically Useful Codes	Radiologic Society of North America Annual Meeting, Chicago, IL	2019
Use Of Gadoxetate For Liver MRI: The Realist	Radiologic Society of North America Annual Meeting, Chicago, IL	2019
LI-RADS Ancillary Features	Radiologic Society of North America Annual Meeting, Chicago, IL	2019
Unknown Case Panelist	Plenary Session Society of Abdominal Radiology Annual Meeting, Scottsdale, AZ	2018
Tips, Templates, and Techniques for Successful Pelvic floor Imaging: Experience of the Pelvic Floor Disease Focus Panel	Society of Abdominal Radiology Annual Meeting, Scottsdale, AZ	2018
Liver Imaging Reporting and Data System (LI-RADS®): Structured Reporting including Management Implications	Society of Abdominal Radiology Annual Meeting, Scottsdale, AZ	2018
<i>Moderator</i> , Improving Radiology Reporting	ACR Annual Conference on Quality and Safety, Boston, MA	2018
RADS-Train: A quality improvement initiative to improve adherence to ACR's Reporting and Data Systems	ACR Annual Conference on Quality and Safety, Boston, MA	2018
Liver Imaging Reporting and Data System (LI-RADS®): CT vs MRI	Society of Computed Body Tomography & Magnetic Resonance Annual Meeting Washington, DC	2018
<i>Moderator</i> , Scientific Session Gastrointestinal: Advanced Liver MR Imaging Techniques	Radiological Society of North America Annual Meeting, Chicago, IL	2018
<i>Moderator</i> , Scientific Session Genitourinary: Benign Gynecologic Disease	Radiological Society of North America Annual Meeting, Chicago, IL	2018
How Do I Perform and Interpret MRI of Pelvic Floor Weakness?	Radiological Society of North America Annual Meeting, Chicago, IL	2018
LI-RADS Ancillary Features	Radiological Society of North America Annual Meeting, Chicago, IL	2018
MR Imaging of Acute Abdomen and	Society of Abdominal Radiology Annual	2017

Pelvis	Meeting, Hollywood, FL	
How to Perform and Interpret MRI of Pelvic Floor Weakness?	Visiting Professorship, Department of Radiology, University of California San Diego, San Diego, CA	2017
How Do I Perform and Interpret MRI of Pelvic Floor Weakness?	Radiological Society of North America Annual Meeting, Chicago, IL (<i>Selected for RSNA Virtual Meeting</i>)	2017
Case Review: Introduction to LI-RADS	Radiological Society of North America Annual Meeting, Chicago, IL	2017
Liver Imaging Reporting and Data System (LI-RADS): An Interactive Tutorial	Society of Abdominal Radiology Annual Meeting, Waikoloa, HI	2016
How Do I Perform and Interpret MRI of Pelvic Floor Weakness?	Radiological Society of North America Annual Meeting, Chicago, IL	2016
Imaging of the Pelvic Floor Disorders Using Dynamic Pelvic MRI	Society of Abdominal Radiology Annual Meeting, Boca Raton, FL	2015
MR Imaging of Anal Canal	Society of Abdominal Radiology Annual Meeting, San Diego, CA	2015
Imaging of the Pelvic Floor Disorders Using Dynamic Pelvic MRI	Society of Abdominal Radiology Annual Meeting, San Diego, CA	2015
Use of Eovist in Cirrhosis	Society of Abdominal Radiology Annual Meeting, San Diego, CA	2015
Eovist in Cirrhosis	Society of Abdominal Radiology Annual Meeting, Boca Raton, FL	2014
Imaging of the Pelvic Floor Disorders Using Dynamic Pelvic MRI	Society of Abdominal Radiology Annual Meeting, Boca Raton, FL	2014
GI High Yield Topics Lecture	3 rd Annual Las Vegas Radiology Review Course, Las Vegas, NV	2013
GI Board Review Session (case-based)	3 rd Annual Las Vegas Radiology Review Course, Las Vegas, NV	2013
Imaging of the Pelvic Floor Disorders Using Dynamic Pelvic MRI	Society of Abdominal Radiology Annual Meeting, Maui, HI	2013
Eovist in Cirrhosis	Society of Abdominal Radiology Annual Meeting, Maui, HI	2013
Dynamic MRI of the Pelvic Floor	Baylor College of Medicine, Department of Radiology, Presented by Singleton Associates, PA, Houston, TX	2012

GI High Yield Topics Lecture	2 nd Annual Las Vegas Radiology Review Course , Las Vegas, NV	2012
GI Board Review Session (case-based)	2 nd Annual Las Vegas Radiology Review Course Las Vegas, NV	2012
Imaging of the Pelvic Floor Disorders Using Dynamic Pelvic MRI	Society of Abdominal Radiology Annual Meeting, Scottsdale, AZ	2012
Use of the Gadoxetic Acid (Eovist) in Cirrhosis	Society of Abdominal Radiology Annual Meeting, Scottsdale, AZ	2012

International

How to use LI-RADS: Looking back to look forward	Global Abdominal Imaging Forum European Society of Gastrointestinal Radiology Annual Meeting Presented virtually	2024
Overview of CT/MRI LI-RADS algorithm	India LI-RADS Webinar Series Presented virtually (over 700 attendees)	2024
LI-RADS Technique	India LI-RADS Webinar Series Presented virtually (over 700 attendees)	2024
Expert panel discussion	India LI-RADS Webinar Series Presented virtually (over 700 attendees)	2024
Systematic approach to imaging-based diagnosis of common liver lesions	Grand Rounds AZ Sint Jan Hospital Av Bruges, Belgium Presented virtually	2024
LI-RADS CT/MRI Diagnostic Algorithm: how and why	Grand Rounds University Health Network Ontario, Canada Presented virtually	2024
Systematic approach to liver lesion characterization: Beyond LI-RADS	European Society of Gastrointestinal Radiology Annual Meeting Gothenburg, Sweden	2024
Future directions of CT/MRI LI-RADS	European Society of Gastrointestinal Radiology Annual Meeting Gothenburg, Sweden	2024
An Overview of CT/MRI LI-RADS	14 th Annual Course on Advanced Techniques in Medical Imaging Madrid, Spain	2023
Pathologic, Molecular and Prognostic Radiologic Features of HCC	14 th Annual Course on Advanced Techniques in Medical Imaging Madrid, Spain	2023

Multimodality manifestations of infection in liver and biliary tract	14 th Annual Course on Advanced Techniques in Medical Imaging Madrid, Spain	2023
HCC screening with abbreviated MRI	VI Annual SYSU Liver Webinar (China) Virtual meeting (over 60,000 attendees)	2023
LI-RADS: Overview	LI-RADS Workshop (Virtual) A Radiology-Driven Approach to Improve Clinical Outcomes for Patients with Hepatocellular Carcinoma in Tanzania: A Quality Improvement Project	2023
LI-RADS: Introduction to CT/MRI Algorithm	LI-RADS Workshop (Virtual) A Radiology-Driven Approach to Improve Clinical Outcomes for Patients with Hepatocellular Carcinoma in Tanzania: A Quality Improvement Project	2023
LI-RADS: Technique for CT and MRI	LI-RADS Workshop (Virtual) A Radiology-Driven Approach to Improve Clinical Outcomes for Patients with Hepatocellular Carcinoma in Tanzania: A Quality Improvement Project	2023
LI-RADS: Case-based review	LI-RADS Workshop (Virtual) A Radiology-Driven Approach to Improve Clinical Outcomes for Patients with Hepatocellular Carcinoma in Tanzania: A Quality Improvement Project	2023
LI-RADS: advantages, challenges, and opportunities	The First Tanzania Liver Cancer Conference (Virtual)	2023
LI-RADS: challenging cases from my workstation	European Society of Gastrointestinal and Abdominal Radiology Annual Meeting Valencia, Spain	2023
<i>Moderator</i> , Scientific session HCC: diagnosis	European Society of Gastrointestinal and Abdominal Radiology Annual Meeting , Valencia, Spain	2023
Imaging diagnosis of HCC	Rad-Aid: Mongolia (Virtual)	2023
CT/MRI LI-RADS: Overview	Congreso Argentino de Diagnóstico por Imágenes (CAD) Buenos Aires, Argentina	2023
Challenging cases in LI-RADS	Congreso Argentino de Diagnóstico por Imágenes (CAD) Buenos Aires, Argentina	2023
Use of abbreviated MRI for HCC	Congreso Argentino de Diagnóstico por	2023

surveillance	Imágenes (CAD) Buenos Aires, Argentina	
LI-RADS: Case-based overview	ACORE: Academy of Online Radiology Education Virtual meeting	2023
LI-RADS v2018: Gaps in knowledge and future directions	ICMRI Annual Meeting Seoul, South Korea	2023
LI-RADS: an Overview	Mexico LATAM Chapter LI-RADS Educational Meeting Mexico City, Mexico (Presented virtually)	2023
LI-RADS Technique	Mexico LATAM Chapter LI-RADS Educational Meeting Mexico City, Mexico (Presented virtually)	2023
HCC surveillance with abbreviated MRI	Mexico LATAM Chapter LI-RADS Educational Meeting Mexico City, Mexico (Presented virtually)	2023
Acute gynecologic conditions: MR imaging	SAR Istanbul Meeting Istanbul, Turkey	2022
Typical and atypical MR appearances of benign liver lesions	SAR Istanbul Meeting Istanbul, Turkey	2022
An Overview of CT/MRI LI-RADS	SAR Istanbul Meeting Istanbul, Turkey	2022
MRI of Uncooperative Patient	SAR Istanbul Meeting Istanbul, Turkey	2022
LI-RADS: Challenging Cases	Jornada Paulista de Radiologia (52 nd Sao Paulo Radiological Meeting) Sao Paulo, Brazil	2022
MRI of Acute Gynecologic Conditions	da Paulista de Radiologia (52 nd Sao Paulo Radiological Meeting) Sao Paulo, Brazil	2022
Gaps in LI-RADS v2018	da Paulista de Radiologia (52 nd Sao Paulo Radiological Meeting) Sao Paulo, Brazil	2022
Film Interpretation Session – Abdominal Imaging case	da Paulista de Radiologia (52 nd Sao Paulo Radiological Meeting) Sao Paulo, Brazil	2022
Enhancement-pattern Approach to	da Paulista de Radiologia (52 nd Sao Paulo	2022

Diagnosis of Common Liver Lesions	Radiological Meeting) Sao Paulo, Brazil	
MR imaging of Uncooperative Patient	9 th Asian Congress of Abdominal Radiology (ACAR) Taiwan (presented virtually)	2022
Gaps in knowledge in LI-RADS v2018: Case-based review	European Society of Gastrointestinal Radiology Annual Meeting Lisbon, Portugal	2022
Introduction to CT/MRI LI-RADS	Café Roentgen Virtual Webinar India	2022
Differential Diagnosis of Common Liver Lesions Using Enhancement-pattern Approach	Radiologic Society of South Africa CME Webinar Series Virtual webinar	2022
Illustrative cases: CT/MRI LI-RADS	Café Roentgen Virtual Webinar India	2022
LI-RADS Overview	Curso de Actualizacion LI-RADS Latino America 2022 Bogota, Columbia	2022
CT/MRI Diagnostic LI-RADS	Curso de Actualizacion LI-RADS Latino America 2022 Bogota, Columbia	2022
LI-RADS Technique	Curso de Actualizacion LI-RADS Latino America 2022 Bogota, Columbia	2022
Case-based review of CT/MRI Diagnostic Algorithm	Curso de Actualizacion LI-RADS Latino America 2022 Bogota, Columbia	2022
Challenging cases: gray areas of LI-RADS	Curso de Actualizacion LI-RADS Latino America 2022 Bogota, Columbia	2022
Expert panel	Curso de Actualizacion LI-RADS Latino America 2022 Bogota, Columbia	2022
Update on LI-RADS Criteria	European Association for the Study of the Liver Liver Cancer Summit 2021 Virtual meeting	2021
Chair of the session: “Early diagnosis in HCC: under- and over-diagnosis and under- and over- staging?”	European Association for the Study of the Liver Liver Cancer Summit 2021 Virtual meeting	2021

Hepatobiliary Agents: Concepts and Applications	ACORE: Academy of Online Radiology Education Virtual meeting	2021
LI-RADS CT/MRI Diagnostic Algorithm and Opportunities for Global Harmonization	Radiologic Society of South Africa CME Webinar Series Virtual webinar	2021
Moderator of the session: "Making MRI more accessible"	International Society of Magnetic Resonance in Medicine Annual Meeting Virtual meeting	2021
LI-RADS in clinical practice: challenging cases (questions from my colleague)	European Society of Gastrointestinal and Abdominal Radiology Annual Meeting Virtual meeting	2021
MRI assessment of Pelvic Floor Dysfunction	Chilean Society of Radiology Annual Meeting Virtual Meeting	2021
LI-RADS: How to Use LR-M and Ancillary Features	The 11th Asia-Pacific Primary Liver Cancer Expert Meeting Virtual meeting	2021
Gaps in LI-RADS v2018 CT/MRI	SYSU Liver Webinar (China) Virtual meeting	2021
LI-RADS CT/MRI Diagnostic Algorithm	Indian Society of Gastrointestinal and Abdominal Radiology 4 th Annual Virtual Conference	2021
LI-RADS CT/MRI Diagnostic Algorithm	50 th Brazilian Congress of Radiology Virtual meeting	2021
Importance of Structural Reporting	50 th Brazilian Congress of Radiology Virtual meeting	2021
CT/MRI LI-RADS Algorithm	International Liver Imaging Series (Virtual meeting)	2020
LI-RADS, Challenging cases from my workstation	European Society of Gastrointestinal and Abdominal Radiology Annual Meeting (Virtual meeting)	2020
From Claustrophobia to Obesity: Will Not Cooperate or Fit	International Society of Magnetic Resonance in Medicine Annual Meeting (Virtual meeting)	2020
<i>Moderator</i> , scientific session Female pelvic diseases	International Society of Magnetic Resonance in Medicine Annual Meeting (Virtual meeting)	2020
Benign pelvic GI diseases	Educational session moderator	2020

	International Society of Magnetic Resonance in Medicine Annual Meeting (Virtual meeting)	
Principles, concepts and applications of Magnetic Resonance Imaging	ACORE: Academy of Online Radiology Education, Virtual meeting	2020
LI-RADS: Challenges and Future Directions	Korean Congress of Radiology Annual Meeting, Seoul, South Korea (presented virtually)	2020
LI-RADS – Practical application on clinical examples	European Society of Gastrointestinal and Abdominal Radiology Virtual Liver Imaging Workshop	2020
Structured reporting in diagnostic imaging	ACORE: Academy of Online Radiology Education Virtual meeting	2020
MR Imaging of Acute Gynecologic Conditions	International Society of Magnetic Resonance in Medicine Annual Meeting, Montreal, Canada	2019
<i>Moderator</i> , scientific session Liver	International Society of Magnetic Resonance in Medicine Annual Meeting, Montreal, Canada	2019
LI-RADS: Major imaging features and diagnostic algorithm	3 rd Annual SYSU Liver Imaging Forum Guangzhou, China	2019
LI-RADS: Ancillary features	3 rd Annual SYSU Liver Imaging Forum Guangzhou, China	2019
<i>Moderator</i> , scientific session Genitourinary Imaging (Non-Prostate)	International Society of Magnetic Resonance in Medicine Annual Meeting. Paris, France	2018
<i>Moderator</i> , educational session From Diagnosis to Assessing Therapy Response: Gynecological Malignancy	International Society of Magnetic Resonance in Medicine Annual Meeting Paris, France	2018
Multiparametric MRI in differential diagnosis of liver tumors	4 th Annual St Petersburg International Oncology Forum St. Petersburg, Russia	2018
Assessment of treatment response of liver malignancies	4 th Annual St Petersburg International Oncology Forum St. Petersburg, Russia	2018
Plenary: MR Imaging of Acute Abdomen and Pelvis	5 th International Congress of Gynaecology and Obstetrics Prague, Czech Republic	2017
Dynamic Pelvic Floor MR	Grand Rounds. Hadassah Medical Center,	2014

Jerusalem, Israel

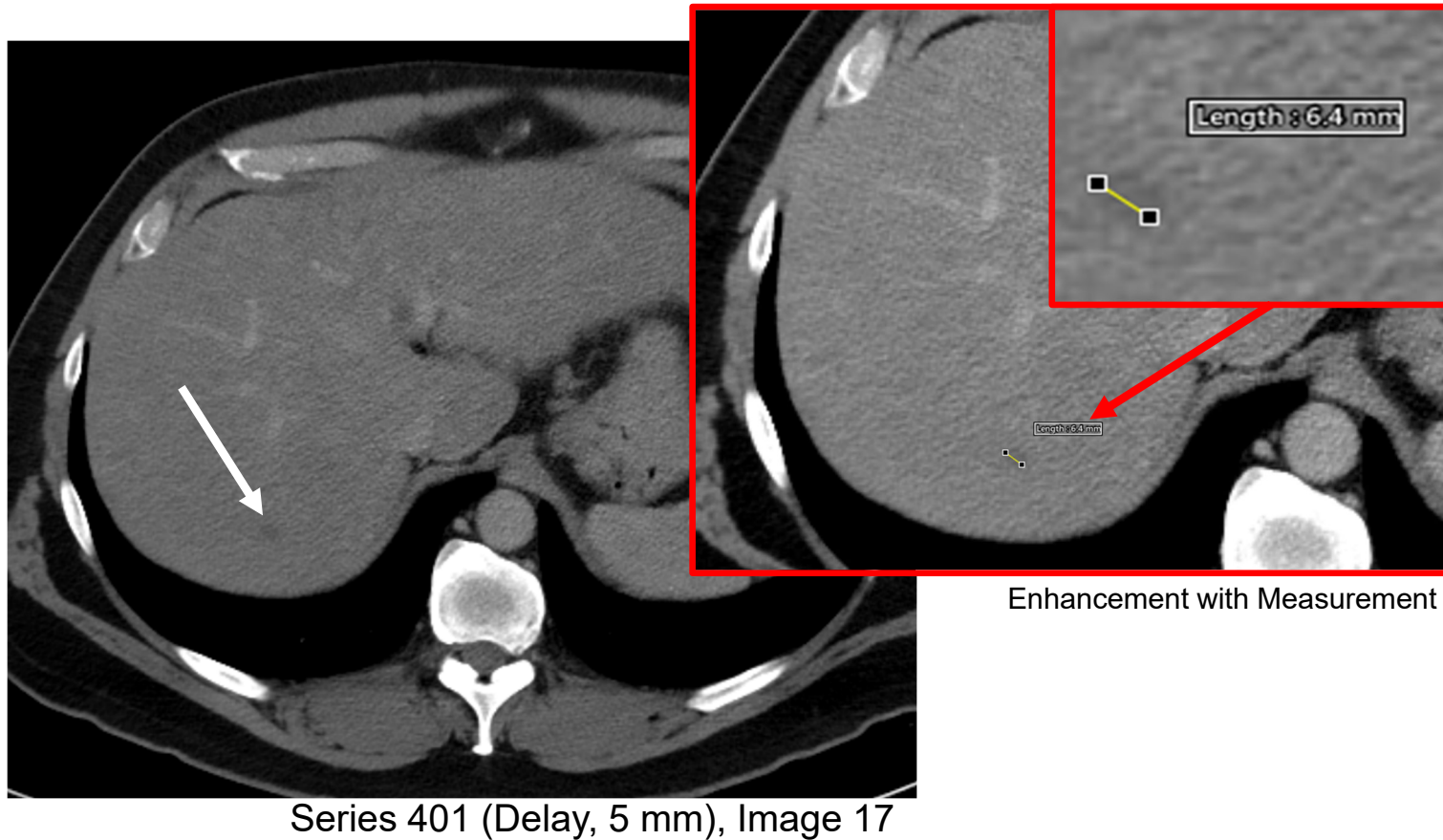
Anal Canal - Anatomy and Pathology

Grand Rounds. Hadassah Medical Center,
Jerusalem, Israel

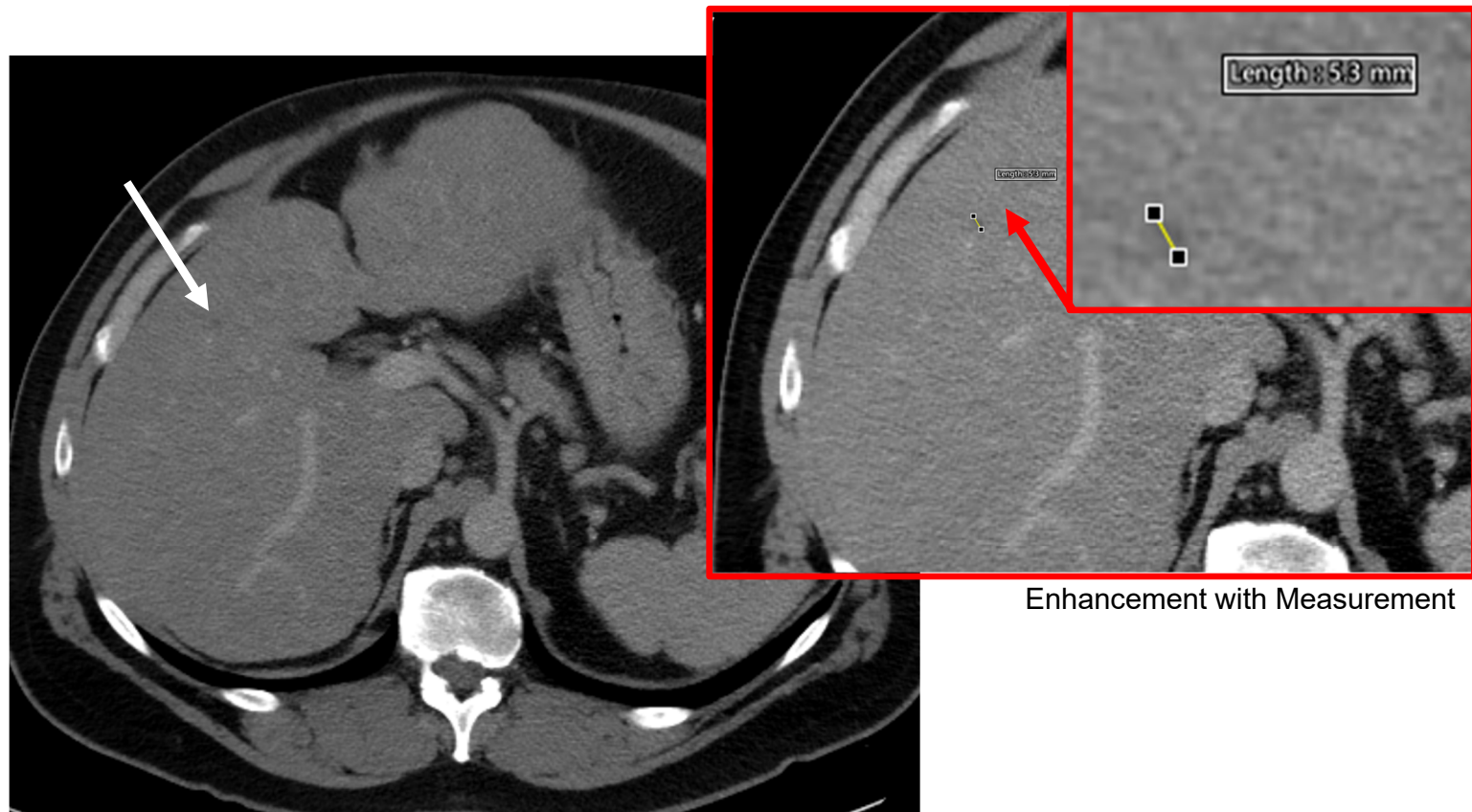
2014

Exhibit B

2016 CT Scan: 0.6 cm lesion in Segment VII



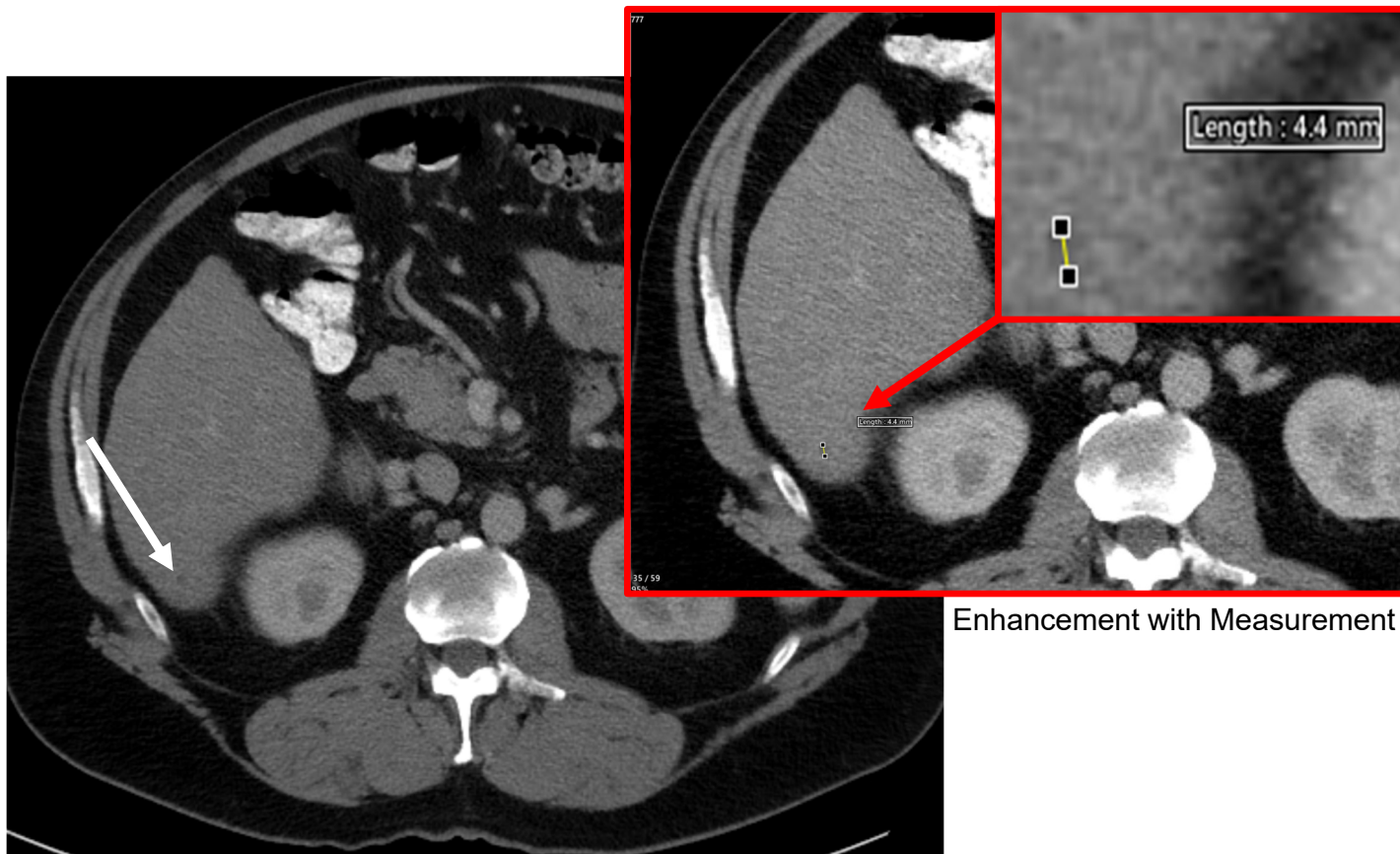
2016 CT Scan: 0.5 cm lesion in Segment V/VIII



Enhancement with Measurement

Series 401 (Delay, 5 mm), Image 24

2016 CT Scan: 0.5 cm lesion in Segment VI

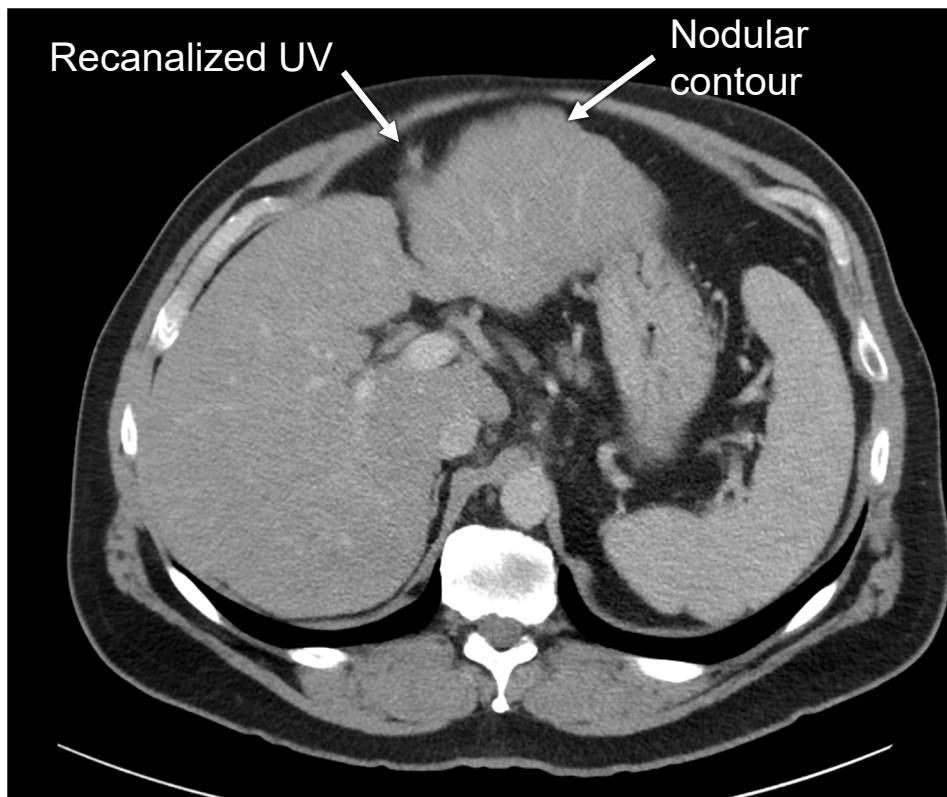


Enhancement with Measurement

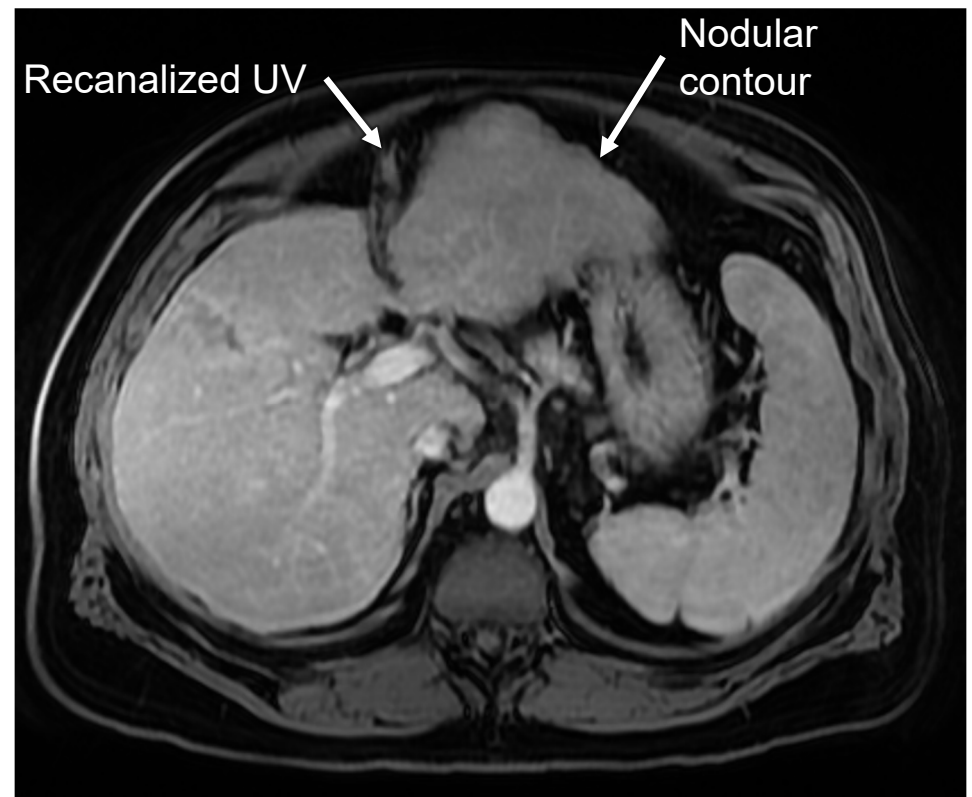
Series 401 (Delay, 5 mm), Image 35

Exhibit C

Morphologic Changes of Cirrhosis in Gaston Roberts' Liver (2016 vs 2018)



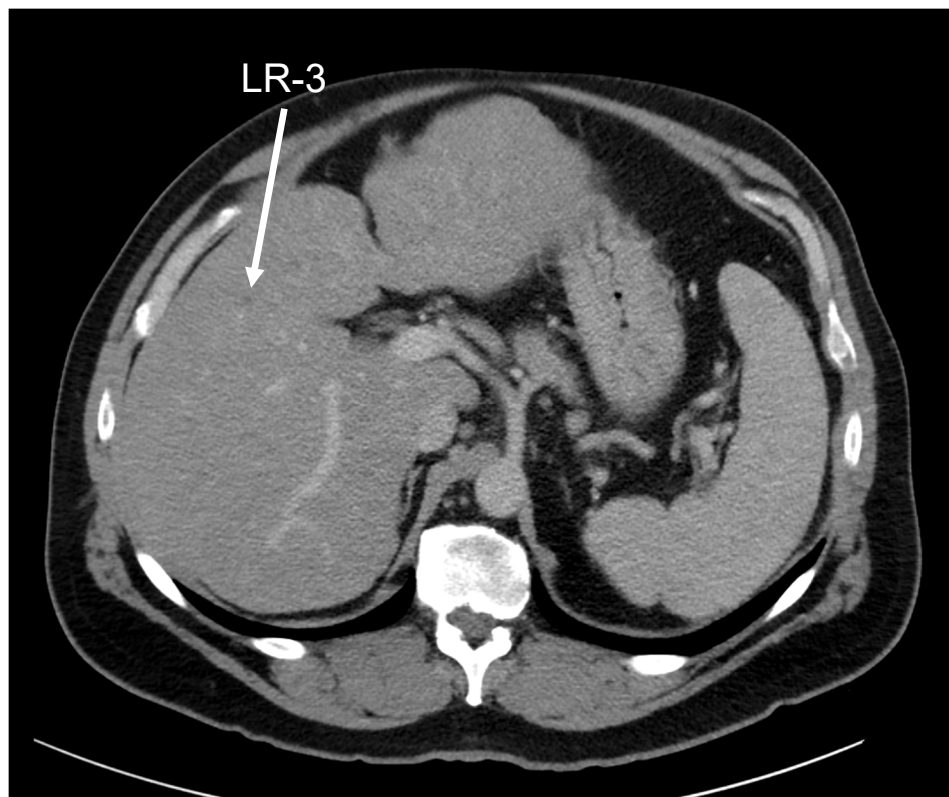
April 2016 CT Scan



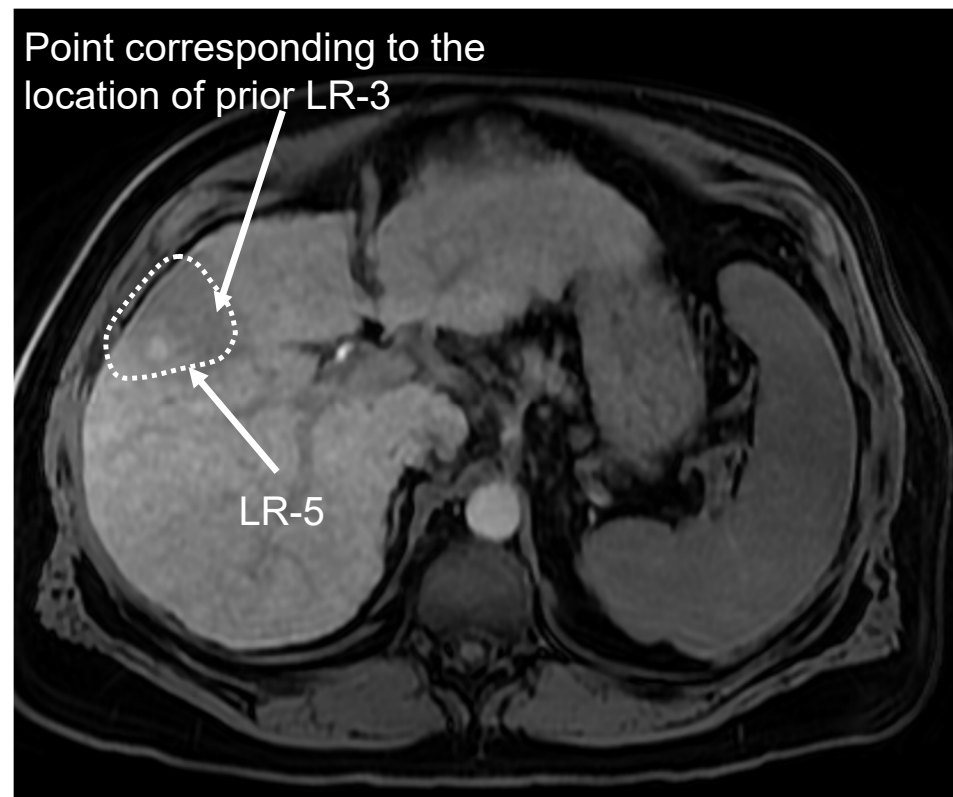
August 2018 MRI

Exhibit D

Segment V/VIII Lesion (2016)
vs.
HCC Lesion (2018)

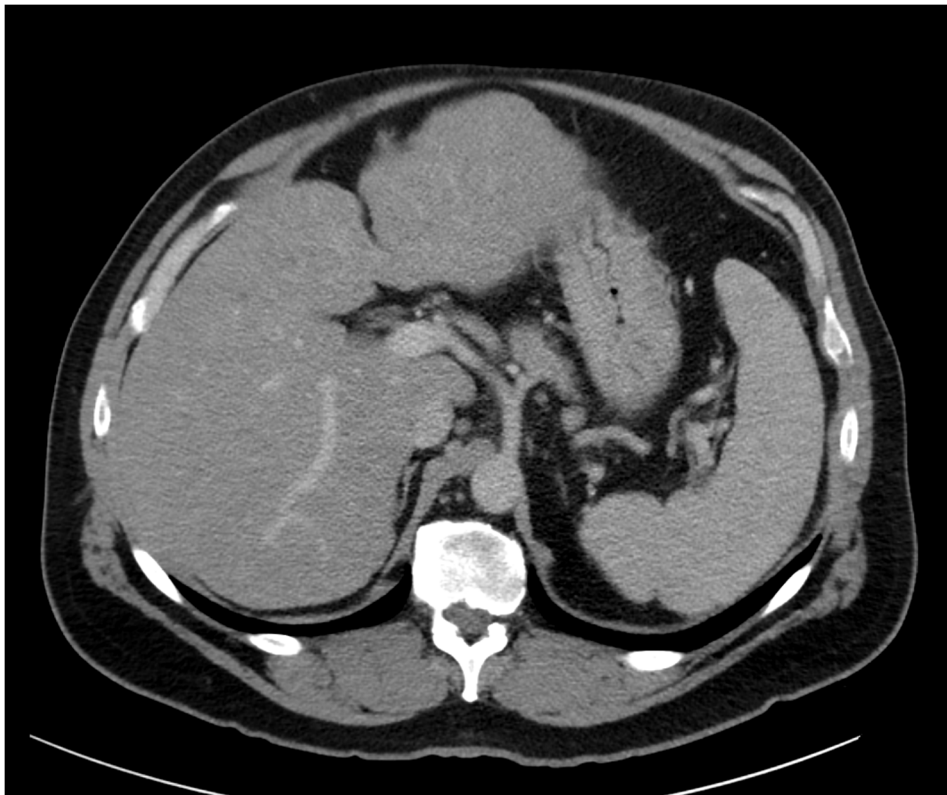


April 2016 CT Scan



August 2018 MRI

Segment V/VIII Lesion (2016)
vs.
HCC Lesion (2018) (without annotation)



April 2016 CT Scan



August 2018 MRI